1995

Evaluating the Efficacy of Communicative Reading Strategies With High-Risk First-Grade Students.

Melanie Crim Michaelson-ezell
Louisiana State University and Agricultural & Mechanical College

EVALUATING THE EFFICACY OF COMMUNICATIVE READING STRATEGIES WITH HIGH RISK FIRST GRADE STUDENTS

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Communication Sciences and Disorders

by
Melanie Crim Michaelson-Ezell
B.A., Louisiana State University, 1971
M.A., Louisiana State University, 1972
May, 1995

ACKNOWLEDGEMENTS

I would like to thank so many people who made this possible. Probably the thing that initiated this process was the death of my dearest son John Andrew Michaelson in May, 1989. Had he lived, I may never have left my comfort zone to try what would have seemed an impossible task. So to you, Drew, thank you for the part you played in this.

The next people on my journey were Janet A. Norris, Chairperson of my dissertation committee and Raymond Daniloff, the Chairmen of the Department of Communication Disorders who encouraged me to attempt this and who offered financial assistance through the Department. Dr. Daniloff is a kind and gentle man who desired what was good for his students. I would like to thank Dr. Paul Hoffman who encouraged me and offered first hand assistance in the area of statistics when it would have been easier not to be available. My other committee members, Dr. Ann Trousdale, Dr. Janna Oetting and Dr. Sarah Liggett also offered many helpful suggestions. Dr. Trousdale's courses also afforded me an opportunity to learn and to heal through the writing process.

I have always counseled my children to surround themselves with those who rejoice with them in success, always want their best, and know how to give as well as to

receive. I can honestly say that I see that in Raven Johnson, a friend in the department. Her kind heart and empathetic nature were always a haven. I share this degree with her!

I am convinced that in all of the world there is not a better dissertation committee chairperson than Jan Norris. She is the ultimate encourager and supporter in a process that often seems hopeless. She is the most gifted clinician I have ever known. In addition, she has a wonderful mind and way of expressing her endless thoughts. I have loved every minute of her classes, her supervision and her assistance through this dissertation. The remarkable thing is that she makes you feel as though you were contributing something to her life as well. She is a friend and a mentor.

My children, Blair, Lindsey and Tripp have had to take care of themselves when they often needed a mom. Thank you for all the carpooling, shopping, and encouragment you gave me. Our roles were reversed but I hope they have learned from this to reach for their own personal dreams.

This process began with the loss of an Andrew, but it was finished with the addition of an Andrew. Andrew Bennett Ezell, my husband of two and a half short years has been the ultimate blessing in my life. When I think of our marriage, and of all the nights I came home to find dinner served, the kitchen cleaned, the children content, the open houses and

PTA meetings attended, and the doctors appointments kept, I cannot express my feelings. I do not know what I or my children have done to deserve the love and assistance of Andy, but I am forever grateful. God knew I could not do this alone and he sent the ultimate giver in Andy.

It seems I have been blessed. So do not look at me and think of what difficulties I have had, but of what was said of Job, "...and the Lord blessed the latter days of Melanie more than her beginning."

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

The specific aim of this project was to determine the efficacy of an integrated approach to remediation of oral language and reading. Communicative Reading Strategies (CRS) (Norris, 1985) was used with a group of twenty-one high-risk first grade students. Improvements were measured for aspects of language development that are specifically related to success in oral language use and reading. Nine children demonstrating below average performance on standardized measures assessing language and reading received intervention. A control group of 12 matched children served to control for changes as a result of maturation or general curriculum effect. The treatment group received intervention four days per week for 45 minutes each day for eight weeks during the summer. Changes in performance on both standardized reading and language measures and informal reading measures from pre-treatment to post-treatment were used to compare treatment and control groups. Additional posttesting at four months and nine months following treatment compared long term effects.

The differences between gain scores for the two groups were compared at three different time intervals. Results revealed significant gains on both the standardized test and on the informal reading assessment. Results verified that CRS is an effective intervention for poor readers. Treatment

subjects simultaneously improved on word recognition, reading rate, and comprehension for both measures.

The treatment group again showed improvement on word analysis skills that could not be attributed to time or maturation.

Although statistical differences were not found between groups on oral language measures, gains for individual subjects suggest CRS treatment positively affected language abilities.

INTRODUCTION

Childrens failure to master fluent and well comprehended reading is a growing problem and concern of educators in America. Many of these reading problems are related to difficulty understanding and using language, with delays in syntactic, morphological, semantic, phonological, and pragmatic aspects of language (Fry, Johnson & Muehl, 1970; Hill & Haynes, 1992; Kamhii & Catts, 1989; Vellutino, 1977; Vogel, 1974; Westby, 1985; Wiig & Semel, 1984). Current reading approaches fall somewhere along a continuum of code-emphasis reading instruction with a strong emphasis on phonics, or a meaning-emphasis instruction with a strong focus on making sense of written text. Neither of these approaches intervenes for the language needs exhibited by many poor readers. The purpose of this study was to investigate the effectiveness of a reading approach that simultaneously addressed the oral and written language problems exhibited by low-achieving first grade children. Specifically, the efficacy of a reading approach termed Communicative Reading Strategies (CRS) was evaluated compared to a control condition.

CRS is a reading approach based on the interactive meaning making process between the author (i.e., the text), the reader, and an adult who serves to facilitate and mediate language and reading using scaffolding strategies. These

strategies address the premise that knowledge is an interaction between cognitive, social, and linguistic abilities, expressed through communication. The reader participates in the reading process as an active constructor of meaning, bringing personal experiences, attitudes and purposes for reading. Through social interactions with an adult facilitator, the child is assisted to read and interpret language and information presented by the text, while remaining in the role of an active constructor of this knowledge. Preparatory sets designed to activate prior knowledge, scaffolded assists such as expansions, extensions, expatiations, and repair strategies to aid the child's reading, and comments regarding the relationship of print to language are used to simultaneously increase the child's language and reading abilities. The child's fluency in word recognition and comprehension are used to determine when assistance is needed in processing any unit of language, from words to complex sentence and discourse structures.

Most remedial reading programs are designed to address specific aspects of reading, such as word recognition, syntactic knowledge, or word structure separately. This results in the need for considerable intervention time and resources to be devoted to an instructional program for children with limited time in a school day. If the scaffolded interactions provided within CRS intervention are effective in simultaneously improving multiple aspects of

oral and written language, including syntactic form, phonological awareness, reading recognition, and comprehension, then the procedure will provide a means for addressing the literacy needs of a population of children currently at-risk for academic achievement.

The Problem: Literacy

The literacy rate in the United States is among the lowest of all industrialized nations (Slavin, Karweit & Madden, 1989). Many children who fail to master fluent reading are those who earlier manifested delays in oral language acquisition (Aram, Ekelman & Nation, 1984; Bishop & Adams 1990; Catts, 1991; Hall & Tomblin, 1978; Hill & Haynes, 1992). Approximately 1.8 million American school children demonstrate reading disabilities attributed to language learning disability, and an even larger group experience difficulties related to social and cultural language differences (Cole, 1987). The implications for failure to address these language learning needs are long-term, since children who fail to master fluent reading in the early grades are likely to leave school before graduation, and remain functionally illiterate as adults (Clay, 1979; Stanovich, 1986).

Educators agree that there is a need for both preventative and remedial programs in the early grades to avoid progressive failure, but the instructional approach that will best meet the needs of these learners is unclear.

The United States Department of Education's (USDOE) Office of Research attempted to identify compensatory models of reading and concomitant validation (Slavin, Karweit & Madden, 1989). This study was commissioned as a result of dissatisfaction with current practice in compensatory education for the at-risk population, and uncertainty regarding clear direction for the future. The findings were inconclusive, but the study did serve to organize and clarify the current status of reading models and research as they relate to remedial instruction. The findings of the USDOE research revealed that most models of reading and reading remediation continue to view oral and written language separately. Additionally, most models have a restricted view of language, and only a limited number view it as an important part of a reading model (Slavin, Karweit & Madden, 1989). Few of the models systematically address language development as part of an oral-to-literate continuum (Westby, 1985). Among the remedial programs investigated, few resulted in significant improvement of the at-risk readers. Those that did show measurable improvement were based on models that recognized the importance of the integration of oral and written language (Clay, 1979; Wasik & Slavin, 1993). The current remedial practices are each influenced by the theoretical models from which they evolved, including their views on the relationships maintained between oral and written language.

Current Reading Practice

The most common approaches to reading instruction in the American educational system place emphasis on teaching either phonics or sight word recognition. Both of these approaches stress the segmentation of oral and written language into discrete units that can be systematically related to one another as they are built into progressively larger language units. The result has been highly developed technological methods aimed at teaching a limited number of discrete skills of reading. These methods lack a current, comprehensive theoretical base, and ignore a continuum of cognitive and linguistic abilities that are involved in the reading process (Goodman, 1985, 1994; Smith, 1988; Wasik & Slavin, 1993). The theoretical base for current approaches originates from learning theories developed by psychologists earlier in this century.

Both phonics and sight word recognition approaches view learning to read as a written word acquisition process. This perspective assumes that once a reader masters fluent word recognition, comprehension will automatically follow. In this view, comprehension is a product of the reading process (Durkin, 1978-1979; Maria, 1990), and poor comprehension results from short-term memory limitations that are imposed when the message is not decoded with sufficient speed (Catts, 1986, 1991; Fry, 1995). When comprehension is not achieved despite adequate word recognition, intellectual rather than

instructional correlates are implicated. However, prior to the dominance of these views, early theorists recognized both the complexity of reading and the importance of language as a primary component of the process. An example of this recognition is the early characterization of understanding a paragraph by Thorndike (1917):

> "Reading is a very elaborate procedure, involving a weighing of each of many elements in a sentence, their organization in the proper relations one to another, the selection of certain of their connotations and the rejection of others, and the cooperation of many forces to determine final responses. In fact...the act of answering simple questions about a simple paragraph...includes all the features characteristic of typical reasoning" (Thorndike 1917, p. 323, reprinted in Robert L. Thorndike 1973, p. 137).

Although this statement indicates much earlier recognition of reading as a holistic and constructive process, it is only more recently that research has begun to evaluate the elements of reading as they function together in integration to result in simultaneous word recognition and comprehension (Goodman, 1985; Smith, 1988; Seidenberg & McClelland, 1989). The reading process is increasingly being evaluated more holistically in research conducted across a variety of perspectives, including artificial intelligence,

information processing, discourse analysis, text analysis, memory, and reading (Ruddell, 1986).

The information derived from the multiple views of reading has helped to identify a continuum of cognitive and linguistic abilities that are interactively related in the reading process. Table 1 summarizes the multiple elements involved in reading process that must be accounted for within a comprehensive model of reading. Traditional models of reading view the relationship between these elements as linear and sequential (i.e., bottom up), with letter and word recognition necessarily occurring prior to higher order processes, both in acquisition and in fluent reading. Recent models for reading view these abilities as interactive, with lower level elements and upper level processes simultaneously contributing input to the system as the act of reading occurs (Rumelhart & McClelland, 1986; Seidenberg & McClelland, 1989). In simultaneous models, information is processed in parallel, rather than in a linear and sequential manner.

Current Remediation Practice

Current remedial reading theories and practices assume that one or more specific areas of processing are weak or deficient when fluent reading is not achieved. Specific instruction directed at remediating the weak area is provided. Each new area examined in the research, such as metalinguistic awareness, narrative structure, or

Table 1

Continuum of Elements Involved in Word Recognition and Comprehension.

Element	Related Research
TOP	
Prior knowledge	Schemata, networks
Event structures	Scripts, story grammar, event Schema
Propositions	Propositional structure
Concepts	Paradigmatic, conceptual structures, networks
Syntax	Syntactic, morphological structure
Lexicon	Words, lexical phrases, metaphors
Phonology	Phonological structures, phonemes, phonemic features, canonical structures phonological processes
Orthography	Pattern recognition
Grapho-phonemics	Phonics
Phonetics	Articulation, speech perception letter-sound correspondence, phonemic awareness
Perception	Acoustic features, production features, visual features, temporal/spatial processing
Sensation	Visual, auditory acuity
BOTTOM	

orthographic regularities, have been added as another component to be tested and treated when reading disabilities are identified. Remedial practices have therefore adopted each current generation of reading model and the associated shifts in focus on different areas of knowledge without consideration given to the interactions between levels. However, other researchers have proposed that consideration of the interactions is critical in understanding the reading process, and in developing comprehensive remedial reading practices (Goodman, 1985; Rumelhart & McClelland 1986; Smith, 1985).

Language and Reading Disabilities

When children fail, they are labelled "dyslexic" or "learning disabled," implying that there is something wrong with their ability to match the visual and oral language codes. However, these labels lack clarity of diagnostic boundaries, and provide little information about underlying causes, and limited provision for the child's educational needs (Shaywitz, Escobar, Shaywitz, Fletcher & Makuch, 1992; Weaver, 1990). In addition, the diagnoses have not resulted in a comprehensive theoretical basis for reading disabilities. The diagnoses most often result in identification of weaknesses in one or more areas of reading, each treated as a discrete component.

Research in the area of reading maintains that reading disabilities are caused by language processing problems

(Kamhii & Catts, 1989; Smith, 1985; Vellutino, 1977). This assertion is supported by a number of demonstrated relationships. Hill and Haynes (1992) showed strong correlations between measures of oral language ability and reading ability. Children treated for preschool language delay are at academic risk for grade retention, and special placements (Aram, Ekelman & Nation, 1984; Bishop & Adams, 1990; Catts, 1991; Hall & Tomblin, 1978). Preschool language errors of syntax and semantics develop into more subtle language difficulties in elementary school (Bishop & Adams, 1990; Catts, 1993; Westby, 1985; Wiig & Semel, 1984). School-age children with language learning disabilities (LLD) develop less informative narratives (Merritt & Liles, 1989; Roth & Spekman, 1986). Their language is less cohesive (Norris & Bruning, 1988). They fail to comprehend abstract vocabulary, complex syntactic structures, and metalinguistic concepts (Crais & Chapman, 1987; Rippich & Griffith, 1988). These problems are not limited to a small percentage of all children with reading disability. Gibbs and Cooper (1989) found that 96% of children with learning disabilities demonstrated concurrent oral language problems. With all of this evidence supporting a link between oral and written language abilities, it is surprising that oral language goals are absent from most literacy curricula or from intervention goals for children with learning disabilities (Berk, 1976; Gibbs & Cooper, 1989; Miller & Dyer, 1975).

Current Intervention Practices

Considering the finding that a large percentage of children with reading disabilities also exhibit language processing problems, it would be logical to infer that language remediation would comprise an important component of the intervention program for children with reading disabilities. However, although Gibbs and Cooper (1989) found that 96% of these children had language problems, only 6% were receiving any intervention for speech and language, and those were primarily children manifesting articulation errors. Speech-language pathologists are often not on the diagnostic teams for reading evaluations, and many speech-language pathologists do not consider reading to be within their professional domain (American Speech & Hearing Association, 1982).

When intervention is provided by speech-language pathologists for delayed and disordered language, the practice of separating language into discrete components and remediating each component independently is often adopted. As in reading, the speech-language pathologist has adopted each new generation of language model by including new discrete components into intervention goals. The resulting practice is to systematically assess and provide remediation for syntactic (Chomsky, 1957), semantic (Katz & Fodor, 1963), phonological (Chomsky & Halle, 1968), and pragmatic (Searle,

1969) deficits as separate entities (Larson & McKinley, 1995; Simon, 1991).

The intervention approaches are based on the assumption that the different components of language and reading function in a linear or modular fashion. These models are contraindicated by research findings demonstrating interactions among components. The modularity of the models leads the person intervening to expect children with isolated deficits. However, research demonstrates that reading and language disorders are typically manifested in difficulties across an array of reading and language components. Consequently, in both reading and language remediation, as a child demonstrates an increasingly greater number of reading and language components that are delayed, the number of targeted aspects for remediation increases, with a resultant smaller amount of intervention time available for each problem area (Allington, 1989). The effectiveness of this approach is further minimized by the finding that the more intervention is constructed to focus on a single component of reading and language, the less likely it is that the learning will generalize to more natural and new contexts of language and reading (Fey, 1988).

An alternative to intervention approaches that address different components separately is presented in a process-oriented approach termed Communicative Reading Strategies (Norris, 1986, 1989, 1991; Norris & Hoffman, 1993). This

approach focuses attention on the level or levels of information needed by the child at the moment of difficulty during contextualized reading. It is consequently responsive to the needs of the child, and provides intervention through social mediation (Vygotsky, 1962), or assistance given as the child is actively constructing the text and its meaning. The differential focus on the levels of information needed by the child is based on principles of whole-to-part learning (Clark, 1993; Goodman, 1986; Nelson, 1985), and is consistent with theoretical models proposed by researchers exploring connectionist mechanisms for processing multiple levels of information simultaneously (McClelland, 1989; Seidenberg & McClelland, 1989; Tierson, 1990).

Structure of Connectionist Models

Connectionism refers to a class of models of intelligence and their underlying theories regarding how neural networks might form and function. The models and theories associated with connectionism can provide a framework for designing intervention and explaining the effects of holistic intervention approaches. Connectionist models and theories are based on common assumptions and traits (Tierson, 1990). The basic structure of these models includes a network of units or nodes. Each node is a neuron-like processor that is connected to a variety of other nodes. At any moment in time, each node has an activity level that is affected by the positive and negative influences of the

other nodes to which it is attached. In turn, the activity level of each node affects all of the other nodes to which it is attached. The connections among nodes carry variable degrees of resistance to the passage of activity from one node to the next. This is identified as weights. Importantly, the connection weights among nodes vary as a function of experience, and thus allow for learning to occur. Learning involves making the connection weights among nodes that are frequently activated at the same time stronger so that the activation of a particular node will more readily activate other nodes that are related through experience.

There are three classes of processing units (i.e., input, output, and hidden). The input units are sensory in nature and account for information entering the system from the outside world through visual, auditory, olfactory, taste, and tactile-kinesthetic modes. Output units send signals outside the system through muscular action and send feedback that results from the person's actions back into the system. Hidden units are internal to the system, having no direct sensory connection to the outside world. The hidden units react to input information and to each other on a continual basis to produce activity at the output units. Processing among the hidden units allows for the formation of layers of internal conceptual structures. The conceptual structures are patterns of activity that have occurred often enough through sensory inputs from the outside world and internal

motoric reactions to have established relatively strong connection weights.

The formation of conceptual patterns of connection weights represent learning within the system. For example, repeated exposure to the word "mommy" spoken by the infant's mother, will increase the connection weights among visual aspects of this word being produced, including two lip closures, and auditory aspects, including two relatively loud pulses. Hidden units that connect these patterns will start to represent the concepts of "word" and "syllable." Connections to a variety of other aspects of the child's sensory experience such as the vision of Mommy's face, being cuddled, dried, and fed will also become part of the network associated with the meaning of the spoken word "mommy." Learning occurs as sensory inputs form patterns of connection weights among the many hidden units that result in motoric output patterns. The outputs are compared to expected outputs, and a process called backward propagation is used to alter hidden connections to change the underlying patterns to more closely approximate the expected output.

Connectionist Model of Reading

Seidenberg and McClelland (1989) developed a comprehensive model of reading based on connectionist principles. A connectionist model provides a method for demonstrating how multiple levels of processing can be coordinated, with changing emphasis on different components

depending on task demands. As shown in Figure 1, the Seidenberg and McClelland (1989) model has four processors, or areas where hidden units process specified aspects of reading, including an orthographic, phonological, meaning, and context processor. Parallel sets of arrows interconnect these processors and are double headed. This design is important because it represents the nature of connectionist mechanisms. The two processors do not merely give input to each other but rather are functioning as an integrated system at all moments of processing. Input from the orthographic processor, for example, is not providing input to the meaning processor, while the meaning processor is giving input to the orthographic organizer which then must be integrated by each. Rather, once connected, neither source has an independent identity that sequentially affects the other, but rather, they function as a single entity. Whatever is connected is what exists as a unified, functional whole.

In reading, print initially serves to provide input to the system at an entry level to the orthographic processor. However, the moment input is received, the entire system affects what is processed. For example, input received from the orthographic processor results in activation of differing connection weights for all potential word candidates in the meaning processor, resulting in both excitatory and

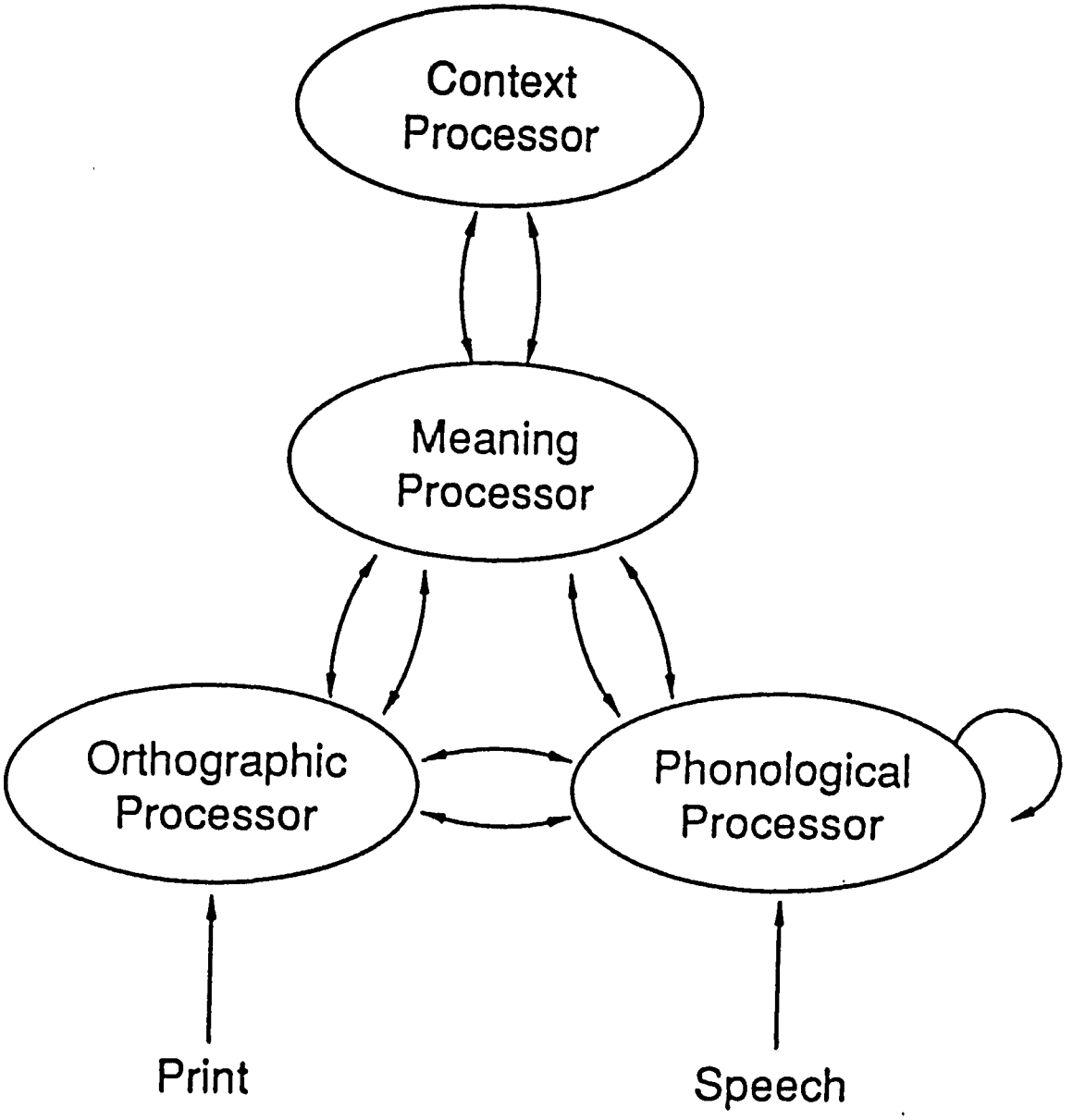

Figure 1. The Phonological Processor.

inhibitory responses in different units at both the orthographic and meaning processor levels (as well as the phonological and context processor levels). This results in the activation of connection strengths for potential graphemes before those letters are actually seen based on their connections to meaningful words that are sending excitatory input of likely letters based on the best-fit input from the context, meaning, and phonological processors. This property of the system enables text to be read even when letters are either missing or ill-formed, or the print is degraded (McClelland, 1976).

Simultaneous Processing Across Levels

The interconnections between the orthographic and phonological processors provide for simultaneous processing of print and phonological translations. The moment graphic input is received, corresponding phonological information is activated. Since both processors are simultaneously connecting to the meaning processor, both orthographic and phonological systems are providing and receiving excitatory and inhibitory input with meaning and context. The system is thus setting up much stronger connection weights to meaning than either could do independently, thus enabling fluency in word recognition and comprehension. Also, infrequent words (especially for young readers) may not in themselves be seen in print often enough to establish strong connection weights, but be much more frequently encountered (both in the past and

present) in speech. Through the paired association with speech, the weak connection weights for the orthographic recognition of the infrequent word can bootstrap on the stronger connection weights provided by the phonological processor, thus setting up the rapid activation needed for fluency and comprehension.

The arrow cycling from the phonological processor indicates the ability of the system to volitionally reactivate speech images. The ability to volitionally reactivate the patterns of connectivity within the phonological processor allows for prolonging processing time without the signal being overridden by new input from outside the system, thus giving control to the learner rather than the external environment. Thus, one important function of pairing orthographic and phonological knowledge is to extend processing time for unfamiliar or ambiguous information.

The architecture of the connectionist model allows for multiple levels of processing to occur simultaneously in continuous communication with all other levels. Consequently, input is not processed based only on what is actually received, but also what is likely to be received based on past learning. For example, the ease and speed of processing the individual letters of words is owed to what readers know about the sequences of letters that are likely to be seen. Skillful readers do not recognize the letters of a word independently of each other. Many patterns, including

interletter associations, syllables, words, and both regular and irregular orthographic patterns, have established associations within the connectionist network. Because of these established associations, readers do not perceive letters of words independently, but rather recognize letter patterns linked through association units.

When a reader fixates on a word, all letters are in full foveal view and the units corresponding to each of its letters receive direct visual stimulation at once, simultaneously receiving and passing excitation to each other at once. Simultaneously, exitatory and inhibitory input is being sent from the context and meaning processors, indicating which words that fit the letter patterns being received at input also fit (or fail to fit) syntactic, semantic, and contextual constraints based on previous words and topics. For example, if the sequence "retr" is received, the word candidates "retire," "retreat," "retread," "retrace," and "retrieve" would receive excitatory input from letter pattern input. However, most of these candidates would receive inhibitory input from the contextual and meaning processors if the previous words in the sentence read, "He was exhausted and decided to ___." Only "retire" and "retreat" would continue to receive excitatory input, and the system would be primed to either receive an "ire" or "eat" in the next fixation.

Change in Focus across Levels

In reading miscues could occur for a variety of reasons. If the system was more familiar with the word "retire," it might provide stronger excitation and settle on that word before the next fixation, when the actual word was "retreat." Readers often produce this type of miscue, as evidenced by self-corrections moments later. Alternatively, if the reader was failing to recognize and comprehend previous words, the word candidates would not be limited or highlighted by input from the meaning and contextual processors, thus resulting in miscues that do not maintain syntactic or semantic sense within the context since all words would be equal candidates at that moment of processing. Reading would become slow and word-by-word, since all of the word would need to be fixated on to settle on a solution. The opposite would happen if the sequence "retr" was not a well-established pattern and did not activate potential word candidates. The meaning and context levels might provide input for a word that maintained sense in the context, such as "sleep," that failed to meet the input expectations of the orthographic processor, but with sufficient excitation strength to override the weaker orthographic input.

The connectionist model is consistent with research demonstrating that increasing the amount of time spent reading is the most effective means for increasing reading proficiency (Anderson, Hiebert, Scott, & Wilkinson, 1985;

Fielding, Wilson & Anderson, 1984; Morrow, 1987). More reading is related to more exposures to patterns throughout the connectionist mechanism, resulting in stronger connection weights for patterns at multiple levels throughout the context, meaning, phonological, and orthographic processors. In contextualized reading, high frequency patterns will develop strong connection weights within the connectionist network. The system establishes connections, weights, and constraints according to the natural distribution of patterns within the meaningful act of reading.

In connectionist models, a focus on any aspect of reading, such as a word, sound, phrase, metaphor, or other unit results from a reciprocal interaction between all levels and processors. Patterns at all levels, including orthography, phonology, meaning and context, contribute to distributing connection weights across units; this results in a strong activation for a whole spectrum of patterns (onset, rimes, sounds, letters, orthographic units, words, sentences, concepts, propositions, and so forth). These patterns are all interconnected and function as a synergistic system. Focus on one aspect of reading is achieved through strong patterns of connectivity for units at any specified level, which occurs as the system sends a higher level of activation to that area of the network. Because of the interconnectedness of the system, focus is easily shifted between meaning (tell me your name) versus orthography (spell your name) without

ever disconnecting the other (a random name is not spelled). Successful readers exhibit evidence of this well integrated, interconnected system when they are able to readily do tasks such as recognize isolated words, produce rhymes, and segment sounds from words and other metalinguistic tasks. Poor readers have difficulty shifting between levels of processing, or recognizing patterns (e.g., single words, pseudowords, orthographic units) outside of a context.

One expectation derived from the connectionist model is that intervention that maintains the interconnected synergy of the system would result in the development of a network that functions normally. If poor readers can be assisted to maintain word recognition and comprehension during contextualized reading, then the system would be provided the opportunity to establish patterns of recognition at the multiple levels of reading simultaneously. The successful word recognition and comprehension resulting from the assisted reading would allow for the orthographic and phonological processors to simultaneously give to and receive input from the meaning and context processors, establishing the desired balance needed for synergistic functioning. This integrated formation of networks of association for all aspects of reading is the goal of Communicative Reading Strategies (Norris 1989, 1991; Norris & Hoffman, 1993). A second expectation is that evidence of refinement across the entire system should be observed. Thus, any one aspect of

the system, such as word recognition, passage comprehension, or metalinguistic awareness, should improve without a direct or specific focus on that aspect of reading. This expectation is consistent with current research on whole-to-part learning.

Whole-to-Part Learning

In a connectionist mechanism, the system functions as an integrated whole. Within this whole, a reconfiguration of connection weights can result in different patterns of activation. Any subset of strong connection weights activated constitutes a part within the whole. Therefore, a letter at the beginning of a word can be focused on and named when it forms a pattern of strong activation of units within the overall configuration, without disconnecting the letter from the word. Both remain part of the active system, resulting in a focus that can easily flow between the parts (a single letter) and the whole (the meaningful word). One theory for describing how such a dynamic system could be created has been proposed by Nelson (1985, 1986).

Event Representations

Katherine Nelson (1985, 1986) proposed that learning was a process of establishing event representations for experiences. From the overall event representation, parts or aspects are parsed, which then recombine to form concepts that are connected to, but separate from, the original event representation. The origin of these event representations

are routine events. The child's active participation in these routine events serves as the foundation for all learning.

Everyday routines such as dressing, eating, and shopping provide frameworks in which the actions of people, including their uses of instrument and language, are organized. The original event is experienced in a temporal sequence that is embedded with actions related by physical cause-effect relationships and the goals of the people involved in the events. Nelson proposed that children rapidly form mental representations for the different events in which they are participants. Common objects, people, and actions that occur across multiple events begin to separate or "parse" from any one event and form a concept that is more abstract than the event representation. Adults assist in this process by focusing attention on, talking about, and meaningfully using objects within the event; this assistance helps the child view individual concepts as separate and important.

Generalized Structures

Event representations result in the formation of conceptual knowledge that stem from, or are grounded in generalized structures. Generalized structures organize parts into coherent wholes. Components of generalized structures include scripts for events that have a predictable sequence of actions (e.g., eating in a restaurant, grocery shopping, preparing a meal, a birthday party), language

structures (e.g., syntax, morphology, and phonology), and discourse structures (e.g., narrative structure, expository form, conversation). Scripts, language structures, and discourse structures are important to the process of reading. Scripts enable readers to activate appropriate background knowledge needed for comprehension of text as it is read. The author cannot include all information that is necessary to understand text (Bruce, 1981). Rather, the reader brings a wealth of background knowledge to text that is read. The single sentence, "'How was your class trip to the farm?'" from The Day Jimmy's Boa Ate the Wash (Noble, 1980, p. 1) requires the activation of background knowledge and scripts for class field trips, and for farm events. Without this background knowledge, the sentence would not be meaningful.

Similarly, knowledge of language structures enables readers to interpret the relationships of meaning maintained between words. Word order establishes that the trip was taken by the class, the trip was to the farm, that the subject of the sentence took the trip, and that a question is being asked about the trip. Similarly, the morphology establishes that the trip was already completed, and that a specific farm is designated. Without knowledge of the structure of the language, the relationships maintained between the characters, actions, and objects would be unclear. The sentences are organized by discourse structures. The reader must understand the conversational

structure in which exchanges between a school girl and her mother occur. The turn-taking, requests for information, acknowledgements, topic extensions, and other conversational devices must be understood to recognize who is talking, and which information relates to the field trip versus the present interaction. The following text illustrates the need for the reader to recognize the structure of the conversational discourse.

"A cow...crying?"

"Yeah, you see, a haystack fell on her."

"But a haystack doesn't just fall over."

"It does if a farmer crashes into it with his tractor."

The discourse structures are themselves organized by a superordinate narrative structure. In this narrative structure, the pictures and the words function to tell the story in a manner that follows conventions for storytelling. The picture depicting a young girl entering the house through a door held open by her mother, together with the sentence "'How was your class trip to the farm?'" introduces the characters, the setting, and the time frame in which the story is interpreted. A series of initiating events that present problems, attempts to solve the problems, and reactions to the problems then are stated in an order that establishes causal connections. Finally, the situation is resolved and an evaluation provided (Stein & Glenn, 1979).

Each of these levels of knowledge, from concepts through narrative structure, function to enable a reader to recognize and comprehend written text. The process of reading is a complex, transactional event in which information provided by the text is integrated with cognitive and linguistic knowledge possessed by the reader (Bruce, 1981). The information possessed by the reader enables word recognition and comprehension to occur, while concepts, vocabulary, and language structures presented by the text function to expand and elaborate linguistic knowledge (Cazden, 1965, 1986, 1988). The use of language to read, and the use of reading to refine language are critical, reciprocal processes that allow for fluent reading, and for reading acquisition.

The close interrelationships between language and reading have caused some researchers to examine the similarities between reading and oral language (Goodman, 1986; Smith, 1985; Teale & Sulzby, 1986). The results of research that examined the reading acquisition process occurring during the preschool years suggest that learning to read is a process occurring naturally in a literate society. Examination of young children engaged in storybook reading and developmental writing demonstrate that children learn to read in much the same way they learn to talk, in a socially interactive, holistic, whole-to-part manner. Adults assist in this process by providing information and prompting

attempts to use written language, a process referred to as scaffolding (Bruner, 1978).

Language Learning through Social Mediation

Learning oral and written language is recognized as an active process in which the child organizes and transforms information through interactions with the environment. The environment includes not only the objects and events to which the child is exposed, but also the social interactions between the child and others that occur within these events (Bruner, 1978; Vygotsky, 1962). Vygotsky (1962) proposed that social interaction results in a process of co-constructing knowledge within a "zone of proximal development" (ZPD). The ZPD is the distance between the actual developmental level (i.e., development that is complete), and the potential developmental level (i.e., learning that can occur when assistance is provided). Vygotsky viewed the ZPD as a means of establishing the foundation for more abstract learning gradually, by enabling the child to participate in more complex behaviors with assistance long before they could be conducted independently.

The assistance afforded children by peers and adults often occurs in the form of language used to provide organization, support, and reference to important information. This assistance, or scaffolding, functions to linguistically code and direct routine events (Bruner, 1986; Nelson, 1989). The peer or adult serves a mediation

function, providing varying levels of assistance, depending on the child's needs. Scaffolding has been found to be a natural and efficient interaction between adult and child, beginning before a child communicates using speech, and continuing indefinitely. This mediation or scaffolding occurs in different forms (Bruner, 1978; Norris & Hoffman, 1993; Snow, 1983; Vygotsky, 1978) and in different contexts (Trousdale, 1990). Scaffolding occurs by demonstration, leading questions, prompts, or by partially solving problems for the child. These "scaffolding" strategies provide the individual greater skill to share knowledge in a way that supports the developmental process within the learner's ZPD (Bruner, 1986).

When adults read with children, the readers construct and reconstruct their view of the text, relying on personal experience, ideational scaffolding provided by language devices such as story structure, and the verbal representation of text presented by the adult who functions as a mediator. "Language is the nurse and tutor of thought" (Bruner, 1978), and as such assists in transmitting cultural conventions of written language. When a reader has not acquired or cannot proficiently access aspects of language, a gap exists between what the reader is required to coordinate and that which can actually be processed. Scaffolding can bridge the gap by providing support and

establishing relationships between the text and the reader's own personal experiences and language system.

Theory to Intervention

The relation between language and reading is a primary component of many reading programs. The direction of this relation differs among reading approaches and the theories from which they are derived. In contrast to the most frequently used programs in the United States, New Zealand's educational philosophy and curriculum stresses comprehension of written language over phonic skill. This system deserves attention because their literacy rate is the highest in the world. Rather than assuming that written language is mapped onto an oral language system, it is assumed that both systems develop together through the process of "meaning making" (Cambourne & Turbill, 1991; Clay, 1972).

Researchers exploring reading as a meaning-making process, including Whole Language advocates, propose that the roots of literacy are in naturalistic, connected discourse that begins with oral language and progressively moves toward understanding the conventional written language forms (Goodman, 1986; Smith, 1986; Weaver, 1990). Much of the foundation for this philosophy or perspective originated in observation of language development as it occurs through social interaction (Snow, 1983), particularly in the context of literate language uses such as parent-child storybook reading (Durkin, 1966; Goldfield & Snow, 1984; Heath, Thomas,

& Branscombe, 1986; Johns, 1984; Teale, 1984; Whitehurst, Falco, Lonigan, Fischal, DeBaryshe, Valdez-Manchaca & Caufield, 1988; Wigfield & Asher, 1984). The Whole Language approach stresses meaningful book reading, oral discussion about books, and reading and writing across the curriculum. Knowledge regarding the phonic aspects of reading are developed as a result of engaging in meaningful language experiences, rather than representing precursors that must be mastered prior to engaging in contextualized reading.

The Whole Language Philosophy

Whole language theory is derived from developmental research in cognition, language acquisition, and emergent literacy. Much of this research incorporated qualitative methods for analyzing the behaviors of successful language learners, successful readers, and successful teachers (Cambourne, 1988; Heath, 1983; Smith, 1986; Snow, 1983; Watson, 1989). This research suggested that three basic principles related to reading and reading instruction (Teale & Sulzby, 1986): (a) literacy acquisition is a continuous, natural process, (b) literacy is a social act that is driven by a search for meaning, and (c) the conditions for using oral language and for becoming literate are parallel (i.e., participation in meaningful, purposeful use of language in either oral or written modes).

Holdaway (1979) proposed that mastering the complexities of oral language, and acquiring rudiments of reading and

writing are part of a process of emergent literacy. Using longitudinal observations, Holdaway identified four stages of early literacy development, beginning with a stage where the child primarily observes the use of literate language, and progressing to participation in language in a collaborative environment (i.e., storybook reading, scribbling and drawing), to independent practice in the literacy event (i.e., independent attempts at storybook reading, writing, and drawing). The final stage is performance, at which time the child becomes a demonstrator, having achieved full competence at the corresponding level of the child's achievement. At this final level, the child can become a model or mediator for a child at an earlier stage of development. The stages observed by Holdaway support Vygotsky's premise that development takes place in a sociocultural environment and is directly affected by the mediation that occurs in that environment (Bruner, 1986; Ferreiro, 1986).

Using ethnographic methods and following Holdaways lead, Cambourne (1988) established seven conditions central to oral and written language learning. The simultaneously occurring conditions and their manifestation in the learning environment for both oral language and literacy are a) immersion in a language and print rich environment; b) demonstration by others of how language and print is used; c) expectations which parents, teachers and peers communicate;

d) responsibility, allowing for child centered decisions in language and literacy based on the child's needs and desires; e) acceptance of approximations of conventional oral and written language form; f) employment of the language and literacy skills in practice; and g) engagement, or extensive time spent immersed in language and literacy. Inherent in this process is the importance of the mediator's response. Cambourne found that the adult's response to literacy attempts were most supportive when they were meaningful, functional, and relevant to the child's needs.

The observational studies conducted by researchers in emergent literacy have provided a general framework for recognizing the interrelationships between oral language and literacy, and for understanding the social interactions that occur which facilitate literacy acquisition in normal development. However, little is known about the development of children with poor oral and written language acquisition, or how the use of specific strategies within the context of reading and literacy experiences might facilitate their development.

Whole Language Intervention

Whole Language Intervention is a model that maintains the principles of Whole Language (e.g., social mediation of the meaning-making process within natural, holistic contexts, resulting in whole-to-part learning), while providing support at a level of intensity and specificity far greater than that

encountered in interactions typically experienced in normal development. The model thus maintain principles of both whole language learning and of intervention, where the intensive use of strategies has been shown to be effective with children exhibiting disabilities (Norris, 1992; Norris & Hoffman, 1993; Fey, 1995). Whole Language Intervention is consistent with models of information processing such as connectionism, that suggest by working within the whole, changes will occur at all levels across the network that were involved in the processing of information. Thus, in this model of intervention there is no need for, or benefit accrued to, targeting and treating different areas of weakness separately (Norris & Hoffman, 1994).

Communicative Reading Strategies (CRS) is one technique that is used within Whole Language Intervention (Norris, 1989, 1991; Norris & Hoffman, 1993). CRS is a communication-based method of oral and written language intervention that involves assisted word recognition, language processing, and comprehension as an integrated, simultaneous process. It recognizes the reader as an active constructor of meaning involved in a transactional process. The reader brings meaning from prior experiences and knowledge and co-constructs meaning from the text. In this technique, readers are provided scaffolded support, using strategies that assist them in successfully reading and comprehending the author's message. The continuous feedback provided by more

experienced adults and peers, and the practice provided to the child, assist the child to actively participate in fluent reading at a difficulty level near the child's upper level of the ZPD (Norris & Hoffman, 1990, 1993; Vygotsky, 1962). The scaffolding strategies provide as much or as little support as each child needs to organize and comprehend the text. The amount of scaffolding needed is determined by continuous evaluation of comprehension, rate, miscues, intonation or phrasing. Comprehension and interpretation using prior knowledge and new information are facilitated through the use of these strategies and the social mediation they provide. The strategies are those shown to be facilitative in both the acquisition of oral language during the preschool years, and of reading comprehension during school-age years.

Summary

There is a literacy crisis in the United States, which for many children begins when they experience failure during the earliest stages of reading instruction. A close relationship between language proficiency and literacy development has been established (Cambourne, 1984; Clay, 1972; Holdaway, 1979; Teale & Sulzby, 1986). This is supported by the relationship of oral language differences to later learning disabilities (Aram, Ekelman, & Nation, 1984; Catts, 1993; Gibbs & Cooper, 1989; Hill & Haynes, 1992; Smith, 1985; Vellutino, 1977; Westby, 1985). Furthermore, reading development is related to the establishment of a

network of prior knowledge, concepts, and generalized structures that is created as a result of an interaction between cognitive, social, and linguistic abilities (Nelson, 1986; Piaget, 1975; Rumelhart, 1980). When reading failures are present, language needs to be a central component of an intervention plan.

Reading requires multiple levels of simultaneous processing. Each of these levels work in parallel to address the multiple components involved in the reading process. It is a flexible process that involves the reader's prior knowledge in the form of schemata, event structures, concepts, syntax, orthography, perception, and other levels. This prior knowledge is integrated with information presented by the text. The reader reconstructs the information communicated by the language of the text, supported by his own systems, to obtain a sense of meaning. If a reader does not possess sufficient language proficiency at any level of processing, learning to read will be a difficult task and will result in problems with word recognition and/or comprehension.

Whole Language Intervention actually using holistic measures has not been well investigated. The few studies that have investigated this approach have shown generalized changes across multiple levels of language processing (Badon, 1993; Hernandez, 1989; Hoffman & Norris, 1994; Hoffman, Norris, & Monjure, 1990; Landeche, 1992). This approach

suggests that multiple oral and written language learning needs can be addressed within the context of holistic interactions. This study will further investigate the effectiveness of Whole Language Intervention by exploring the efficacy of a specific technique, Communicative Reading Strategies. The effects of this technique on poor readers oral and written language ability will be examined.

REVIEW OF LITERATURE

The purpose of this study was to investigate the effects of a communicative approach to reading instruction on the reading and language proficiency of at-risk first grade subjects. It was hypothesized that Communicative Reading Strategies (Norris, 1985, 1988; Norris & Hoffman, 1992) would be effective strategies for improving reading and language abilities of at-risk first grade readers. Communicative Reading Strategies is a reading approach that is based on the interactive meaning making process between the author (i.e., the text), the reader, and an adult who mediates through the use of scaffolding strategies.

Considerable support for the use of these scaffolding strategies can be found in interactive models of reading, in research that explores the Whole Language philosophy, in research that examines the effectiveness of individual scaffolding strategies used singly or in combination, and in studies examining the efficacy of reading intervention programs consistent with interactive reading models. Each of these will be discussed in relationship to Communicative Reading Strategies.

Interactive Models of Reading

Current interactive models of reading describe reading as a complex process in which the reader interacts with text and with others in authentic ways to construct meaning. The

meaning is derived from activation of perceptual, cognitive, and linguistic processes (Ruddell & Haggard, 1986; Rumelhart, 1977; Samuels and Kamil, 1984). In addition, reading involves simultaneous utilization of information intrinsic and extrinsic to text. The reader both brings meaning to and takes meaning from the text (Pearson, 1985; Tierney & Pearson, 1983). Prior knowledge in the form of general knowledge, and specific language knowledge related to text structure, syntactic, lexical, and phonological knowledge is brought to the text. This extrinsic knowledge interacts with intrinsic information from the text to create an actively constructed, coherent, and meaningful mental representation of text.

During initial stages of reading acquisition, the child most efficiently constructs meaning through a collaborative interactive process in which a child is assisted by an adult or a more capable peer in problem solving, task completion or goal achievement (Vygotsky, 1978; Wood, Bruner, & Ross, 1976). Feedback accompanying the reading practice facilitates this process. This feedback is best utilized within a "zone of proximal development" or a level that is more challenging than independent, but not beyond the child's capabilities when provided assistance (Vygotsky, 1978). In addition, the process should result in simplification, as well as explicit accentuation, of critical features of a task. Various "scaffolding" strategies can be used to make

the task explicit and to model appropriate approaches to interpreting information. The ultimate aim is independent generalization to new contexts. This is accomplished through gradual withdrawal of assistance as the learner becomes increasingly more accomplished at using the skill, language structure, and/or strategy. Thus, the reader is allowed to participate in an activity that he does not have independent use of, and to move toward independent use. The scaffold is interactive and is not something that can be discretely defined. By nature it is adjustable and temporary (Palincsar, 1986). Research examining effective curricula for at-risk learners suggests that scaffolded interactions are a critical component of reading instruction.

Instructional Interactions for At-Risk Readers

Heath (1983) examined the use of language within three rural communities. Following five years of ethnographic field work primarily in the homes of these communities, she observed classrooms in low socioeconomic schools in the communities and she concluded that the children would benefit from a curriculum that provided an enriched language environment that incorporated and expanded on personal experiences she had seen during her field research. To accomplish this, she made suggestions to local teachers for expanding the use of modeling and scaffolding procedures to enhance discourse development in the classroom. She recommended that the curriculum begin with familiar content

and familiar talk before introducing new language forms or unfamiliar content. She further recommended the use of peer models, and frequent opportunities to practice a large range of discourse functions. The use of metalanguage was to be introduced later in the program, when children had a good understanding of language and its functions.

The resulting change in the curriculum of one classroom in this study included a greater focus on active experiences with language, incorporation of the language of the community, and many experiences that provided opportunities for social interaction and action-based learning. The change in the curriculum was paralled by a change in academic performance. In standard classroom assessment of 24 predominantly low socioeconomic second grade children, 18 children began second grade below grade level. Six of the children had repeated first grade, and six children were on grade level. Reading tests at the end of second grade revealed 14 children were on grade level, eight were above grade level, and two were below grade level. The incorporation of the linguistic features of the language of the community, and the meaningful experiences with narrative forms of language were reported to be the most important components for the success of the subjects.

Heath demonstrated that children who are at-risk can achieve in reading when the materials they are using are meaningful, and when they are allowed to participate using

their current knowledge of language while assisted to master more literate forms. Whole Language theorists suggest that these meaningful experiences with reading provide an environment in which written language can be acquired naturally, similar to the manner in which oral language is learned. According to this view, to understand and mentally construct the many layers of knowledge required for fluent reading, children must be immersed in experiences with print that maintain the integrated properties of natural language (Clay & Cazden, 1990; Goodman, 1985).

Whole Language: Natural Events and Texts

In an attempt to simplify the process of learning to read, many reading programs present children with a hierarchy of skills that represent components of the reading process. Activities are presented that isolate sounds, letters, and words from the language system so that they may be focused on and practiced. This approach to reading instruction focuses little attention to how the systems relate naturally within connected text. When contextualized reading is presented, both the vocabulary and syntax are controlled, often resulting in loss of style, predictability, and naturalness. The stories present fewer plot complications, less character development, and less conflict within and among characters. Richness in vocabulary, sentence structure and literacy forms is diminished (Goodman, 1988).

The teaching of isolated skills and the use of controlled texts in many ways makes the reading process more difficult because the number of cues used for word recognition and comprehension are reduced or limited. More complex, natural stimuli found in literature and other meaningful text provides the wide range of cues that good readers use to maintain fluency and meaning when reading. When reading coherent passages, the stories and sentences provide a means of conceptually organizing information as it is read. This experience with integrated, whole text is important to the organization of both meaning and form. Ausubel (1960) found better word recognition and comprehension when literature used within themes comprised instructional materials compared to a condition of rote learning of narrative structure. Ausubel (1960) concluded that the stories themselves provided ideational scaffolding for the reader, allowing an understanding of the overall structure of narratives to evolve without direct instruction. Other studies evaluating the effectiveness of whole text have found it more beneficial than more isolated, skill-based approaches to reading.

Cohen (1968) examined reading comprehension in a group of low socioeconomic status (SES) second graders who were below grade level in reading. Instructional strategies in the treatment group of 155 children included reading aloud, followed by meaningful activites that reinforced the story.

A control group of 130 children received the traditional classroom basal instruction that included isolated practice on various aspects of reading skills. Administration of standardized tests and a free association vocabulary test in October and June of second grade resulted in significantly better performances for the treatment group compared to the control group in word knowledge, reading comprehension, and quantity and quality of vocabulary. After removing the six lowest cases from both groups, the researcher reported greater significance. A replication of this study by Cullinan, Jaggar, & Strickland (1974) resulted in similar findings.

Eldridge and Butterfield (1986) compared a basal program to five others methods, two of which were literature based programs. Fourteen of the 20 significant differences favored the literature program paired with a researcher developed decoding program used approximately 15 minutes per day. The literature program was used with a second grade population using texts not controlled for vocabulary. At the end of second grade, 91% had readability scores greater than third grade and 62% were at a fourth grade reading level (Eldredge & Butterfield, 1986). An adaptation of Eldredge and Butterfield's study utilized a literature based reading and writing program with a fifth grade population (Tunnell, 1986). Five of 28 children were in a Chapter I pullout program. After seven months of instruction, the average SRA

reading gain was one complete grade level plus one month. The average gain for eight reading disabled subjects was one year, three months, with a comprehension gain of two years. A thirteen question reading attitude survey revealed that self concept related to literacy increased, and all attitudes toward books and reading were positive.

Reutzel (Reutzel & Fawson, 1991) implemented a literature-based reading program with 63 first grade children. All elements and skills of reading were taught within a meaningful context, using no basals, worksheets, drill, or state curriculum. The state skills test goal was 80% performance on these skills at the end of the school year. The mean test score for this group of children was 93% in January of first grade. On the Standford Achievement Test (Educational Testing Service, 1985), administered in March, the modal scores on word study skills, comprehension, and total reading scores were at the 99th percentile. All individual scores increased a minimum of one grade level except for four children. The lowest score was at the first grade, second month equivalency. One of the children who scored on grade level had an IQ score of 68. This project was determined to be very successful when performance was compared to previous scores received by this school and similar populations on state skills tests and the standardized achievement test.

Shared book experience, developed in New Zealand, is a developmental reading program for first grade children using nongraded texts and no structured materials. The teacher uses natural and complete text paired with an initial reading by the teacher, followed by rereading and discussion of the text by the children. All word recognition skills are taught in context and children are encouraged to relate the story to personal experience. A study by its developer (Holdaway, 1982) revealed that the experimental group performed at a level equal to or higher than both the skills based experimental group and the control group. The Department of Education of New Zealand recognized it as an instructional program of choice.

Larrick (1987) used a literature program encouraging children to read natural, whole text without pressure, coupled with language experience activities related to the text. Skills were taught within a meaningful context. No basal or workbook activities were used. The program began in kindergarten with a low SES population. Ninety-two percent were from non-English speaking homes, 96% were below poverty level, and 80% spoke no English when entering school. By the end of kindergarten, all of the subjects could read their own dictated stories and the picture books used in class. A small number of the subjects were reading at a second grade level. By spring of first grade all 350 children were in first grade and were reading English. Sixty percent were on

or above grade level. The only three of 350 that failed the district reading comprehension test entered the program late after being in the United States less than six months.

White, Vaughn, and Rorie (1986) used a literature program with one classroom of 25 first grade subjects. Used in a rural, economically depressed community with a high classroom failure rate, 20 of the 25 students scored second grade or better on standardized tests at the end of first grade. The other five scored between first grade six months and first grade nine months, with the lowest reader in the 54th percentile.

These studies have demonstrated support for the effectiveness of using whole text in promoting reading recognition and comprehension for different age and ability groups. Much of the research on whole, natural text has been conducted in the early grades. High success rates suggest that the use of literature is an effective method of reading instruction. More studies are needed using control groups and instructional comparisons to support the use of whole text. Studies are also needed to define the specific strategies used by readers as they learn to organize the text from the context provided by literature. These strategies can be described as assistance provided by a more proficient reader that supports the attempts of the less skilled reader. This type of assistance has been referred to as "scaffolding."

Scaffolding as an Interactive Process

Scaffolding occurs naturally in conversation and has thus been used to explain the assistance and support provided to children during language acquisition. This interactive process has also resulted in development of several scaffolding strategies used during reading acquisition. As in language acquisition, scaffolding during reading is used to provide support that is continually adjusted. The adult must be sensitive to cues provided by the child that indicates greater assistance is needed, or greater independence is possible. As in language acquisition, dialogue is central to the continual fine tuning ongoing during reading. This is especially crucial during the initial stages of reading as the reader internalizes the dialogue used in collaboration with the more capable peer or teacher (Wertsch, 1985).

Support for the use of scaffolding strategies in reading instruction can be found in reading comprehension research. A range of strategies have been found to be effective in improving word recognition, comprehension of literal and inferential meaning, and recall. They include strategies that assist in organizing text, such as parsing and preparatory sets; strategies that function to elaborate and clarify, such as expatiation, association, and generalization; and strategies that aid in processing connected text, such as extension, expansion, and

paraphrasing. The majority of studies supporting the use of these strategies examined the efficacy of each strategy independently, although a few studies measured the effects of combinations of strategy use. The following discussion will review research examining the effects of individual scaffolding strategies on reading recognition and comprehension, and will conclude with studies examining strategies used in combination.

Strategies for Organizing Text

While little is known about strategies used by beginning readers as they learn to organize text, much is known about what good readers do when reading. Good readers impose organization on text as it is read. They make use of their prior knowledge to frame and interpret the information that is read, use knowledge of grammar to group written words into meaningful units, and make predictions about text before it is encountered based on a range of semantic, syntactic, discourse, and conceptual cues (Maria, 1990). Communicative Reading Strategies are based on the premise that within mediated reading, assistance can be provided to activate these organizational processes in normal and poor readers. Research supporting the use of the mediational strategies of parsing and preparatory sets to assist the reader in organizing difficult text can be found in studies examining both word recognition and comprehension.

Parsing

Parsing is the chunking or dividing of complex information into smaller idea units and/or the processing of ideational relationships within the whole text. Within Communicative Reading Strategies, this can be done at many different levels. For example, at the sentence level, the mediator can demonstrate how a sentence is composed of smaller, syntactic and/or semantic units. Visual input from the text is used to demonstrate how complex language works (Norris, 1991). Reading necessitates the understanding of these grammatical and semantic relationships for addition, amplification, contrast, reason or cause, result, evaluation, definition, restatement, or summary (Maria, 1990). Various studies have looked at the effect of parsing information on reading comprehension.

Afflerbach (1987) studied expert readers and found that successful readers return to difficult text to locate relationships between words, ideas and concepts. Subjects in this study parsed the whole message into more managable units of meaning. Rereading and parsing enabled the reader to revise and reinterpret information that was read, and to add details and make clarifications. Afflerback concluded that parsing the text enabled the reader to reconstruct it, and in the process to internalize important relationships about the text. Maria (1989) proposed, after observing the reading acquisition process, that younger or less able readers need

more frequent parsing, and that parsing or chunking can be done at any level, depending on the strategy being targeted.

Colwell (1982) examined the effects of parsing within connected text. Four relationships of meaning and form were identified within the paragraph (i.e., lexical, grammatical, semantic, and logical relationships). These relationships are combined in both direct and indirect, subtle ways to create cohesive text. Colwell compared a treatment group where the four types of relationships were both directly taught, and verbally identified and discussed within a paragraph, with a control condition. The control group received a directed teaching method, where the lexical, grammatical, semantic and logical relationships were taught separately in a drill and practice format. Sixty eight subjects equally distributed across three ability levels (i.e., high, average, and low) and the two treatment conditions received instruction for ten days, 45 minutes per day. At post-testing, content acquisition and organization of knowledge were significantly better for the treatment versus the control condition for all achievement groups; and interpretive comprehension was significantly better for the treatment condition for all but the high reading groups. Experience with identifying the four types of relationships within paragraphs was important for comprehension.

Parsing functions to organize the information that is provided by the text. It enables the reader to learn how

complex sentences function to coordinate and order many ideas into relationships of time, causality, adversity, and so forth. But successful reading also depends on the integration of information that is external to the text, such as prior knowledge. A second strategy used within Communicative Reading Strategies, termed Preparatory Sets, can serve as an effective strategy for activating this information.

Preparatory Sets

The term Preparatory Set refers to information that a listener or reader possesses about a topic and uses to frame the interpretation of a message (Anderson & Pearson, 1984; Anderson, Hiebert, Scott, & Wilkinson, 1985; Anderson, Reynolds, Schallert, & Goetz, 1977). A preparatory set establishes a relationship between words in the text and prior knowledge possessed by the reader. Research has explored the effectiveness of such preparatory sets when used prior to reading a passage, and when they occur throughout a written passage. This support includes research on prereading instruction, advance organizers, and graphic organizers.

Prereading Instruction. Prereading instruction was derived from research examining strategies used in successful reading (Afflerback, 1987; Johnston & Afflerback, 1985). The researchers determined that the reader develops an initial tentative hypothesis prior to reading from titles, headings,

pictures, and other cues. The hypothesis activates pertinent prior knowledge. It is then used to monitor new information and to predict future events. Activation of prior knowledge has been investigated when used to generate predictions (i.e., the survey, question, read, recite, review (SQ3R) procedure) (Robinson, 1946), in inference training (Hansen & Pearson, 1983), and when used within semantic mapping, graphic organizers, and questions.

An example of this was a study with a group of seven low SES sixth grade subjects in a Chapter I program. Maria (1989) demonstrated the efficacy of developing background knowledge using discussion and semantic mapping of a central concept in the group. Maria noted that younger or less able readers needed more preparatory information with frequent parsing, and that parsing or chunking can be done at any level, depending on the language structure being targeted.

Hansen (1981) used the concept of prereading instruction in designing a study to compare methods that developed connections between previous experience and the text. The study used two treatment groups and a control group. Treatment one comprised a prereading activity designed to activate knowledge about a topic prior to reading the text. Treatment two was a task requiring the reader to answer inferential questions based on associations between text events and prior knowledge. This was a practice only task with no instruction provided. The control group received

basal instruction. All groups received identical vocabulary instruction. The instructional methods were used with a group of 24 middle class second grade readers performing at or slightly above grade level in reading. The researchers used ten basal reader stories over four days with the three groups of children. At posttesting, performance on comprehension questions related to the stories resulted in subjects in treatment one performing significantly better on all questions, both literal and inferential. Subjects in treatment two performed significantly better than the control. On transfer measures including standardized reading tests and a researcher designed test on new material, all scores favored the two treatment groups.

Advance Organizers. The effect of advance organizers on ability to recall text information was demonstrated in a study of seventh grade students (Rinehart & Welker, 1992). Ninety subjects were divided into five groups with an equal number of above and below average readers. An advance organizer was designed to visually or orally represent the concepts presented in a text. The organizer was provided to give a conceptual framework for five passages. Three activator questions were used during teacher guided discussion. Multiple choice comprehension tests emphasizing literal and interpretive comprehension were given to test immediate recall and recall two weeks later. Five experimental treatments included (a) an oral advance

organizer followed by teacher-guided discussion, (b) an oral advance organizer without teacher-guided discussion, (c) silently reading an advance organizer followed by teacher-guided discussion, (d) silently reading an advance organizer without teacher-guided discussion, and (e) a control condition with no advance organizer or discussion. All experimental treatments had an effect with the most resilient effect seen for Treatment 1 (i.e., oral advance organizer followed by teacher-guided discussion). Discussion also was a crucial factor, evidenced by subjects receiving the highest scores on more difficult questions when the organizer was coupled with discussion (i.e., Treatments 1 and 3). It was proposed that discussion allowed for active processing and increased teacher sensitivity to student knowledge.

Graphic Organizers. Different combinations of graphic organizers and instructional models were used with 84 sixth grade subjects during individual and group instruction. Fifteen 45 minute lessons used visual organization strategies to identify the most salient features of the text and to specify the relationships of the connecting ideas (Darch, Carnine, & Kameenui, 1986). After the researchers presented five units consisting of three lessons each, a pretest and posttest design was used to measure change. Four groups, including use of graphic organizers in group and individually, the SQ3R method in individual, and direct instruction in group were compared. Results indicated lack

of a significant difference between SQ3R and Directed Teaching; a significance difference was found between the individual and group use of the graphic organizer (group > individual). Also, children in the graphic organizer group and individual treatment conditions performed significantly better than the direct instruction group. Every finding supported prereading strategy use by the children. No directed teaching methods were supported.

Strategies that function to organize text prior to and during reading in the form of parsing, prereading instruction, advance organizers, and graphic organizers assist the reader by building a bridge between prior knowledge and new information. Advance organizers and themes that provide conceptual organization have been shown to enhance reading and comprehension more than instruction focusing on direct instruction (Ausubel, 1960). Providing information that establishes relationships between the reader's knowledge and the text allows for personalization of instruction (Cazden, 1988), and is more beneficial with at-risk readers (Maria, 1990). Most of the research related to prereading strategies examined comprehension at the level of information from the text (Langer, 1982), rather than the word, phrase, sentence, or paragraph level. But other research supports the use of strategies that function to elaborate or clarify specific concepts and structures within the text.

Strategies that Elaborate and Clarify

The organization and activation of prior knowledge are based on the assumption that the reader possesses the information required to understand the text. This includes knowledge of the form of the language, the structure of the discourse, the concepts important to the story, and an understanding of the story events. When a reader lacks sufficient knowledge at any level of meaning or form, strategies must be used to provide needed information. Communicative Reading Strategies assume that within mediated reading, assistance can provide needed information when it is required by the reader. Research supporting the provision of information in context is described in relationship to six mediation strategies, including expatiation, association, generalization, extention, expansion, and semantic cues.

Expatiation

Expatiation is used to provide information that elaborates on an idea, a concept, or a word. It is used to provide background knowledge, to clarify unfamiliar vocabulary, or to establish the meaning of a metaphor or other form of figurative language. It is also used to assist the reader in bridging the gap between information explicitly stated in the text and implicit inferences or interpretations (Norris, 1991).

Readance, Baldwin, and Head (1987) used a contextualized method for metaphor instruction and compared it to a basal

instruction method. The basal method included giving a definition for a metaphor, and then providing practice in selecting metaphors within sentences. The researchers' process method provided the readers with a model using metaphors meaningfully in whole text, a definition, and guided practice (i.e., an opportunity to use metaphors orally or in written text with immediate feedback from the researcher). The two methods were used with 52 average and above average readers. Assessment included defining eight novel metaphors. Treatment subjects scored significantly higher than control subjects ($p < .003$), with no one item accounting for the difference. The treatment group also outscored the control on seven of the eight items. In addition, experimental subjects exhibited enthusiastic behavior, a desire to share the new knowledge with friends, and requests to use the new methods in writing narratives.

Duffy and Roehler (1987) tested guided practice using a collaboration between peers for increasing reading comprehension. Termed "responsive elaboration," the primary components were peer modeling, and response to misunderstandings signalled by the researchers. This interactive process required the researchers to continuously be responsive throughout the session to the reader's interpretation of text and then to elaborate the response or the model provided by the student. Developed as a result of two descriptive and naturalistic studies with 63 second,

third, and fifth grade subjects, the researchers recognized the importance of its continual use in an interactive cycle. The study resulted in expected findings of increased awareness and achievement in reading comprehension. The unexpected finding was that the success of responsive elaboration depended on the strength of the collaboration and student mediation. They concluded that effective intervention was a dynamic process that cannot be proceduralized because of the unpredictability of response to the elaboration.

These studies support the use of strategies that expatiate, or provide information as it is needed to clarify, define, or elaborate on concepts within a meaningful context. As with previous strategies, the efficacy of using strategies within a collaborative interaction between the reader and a mediator is supported. The dynamic process based on responsiveness to reader needs was found to be a critical component, and by its nature cannot be proceduralized. While expatiation is effective at providing information needed to understand specific text-related concepts, other strategies are needed to assist the reader to link information across units of text, such as paragraphs or episodes. Research supporting assistance designed to link information are included within the category of association strategies.

Association

Readers often have difficulty linking new information with ideas that have been established on previous pages, paragraphs, or episodes. Association provides a means for understanding that comprehension crosses the boundaries of a sentence, paragraph, or chapter. All of the information previously provided by the text is used in interpreting new information, but readers often need strategies for associating new and old information.

McCormick and Hill (1984) demonstrated improved comprehension when reading teachers were trained to use strategies establishing associations between new and old information. Eighty low SES fifth grade readers participating in a Chapter I program were randomly assigned to three groups. The mean reading age was second grade, eighth month. The first group used basal reading instruction. This consisted of the student reading the story silently and answering related post-questions in story form. The second group (i.e., strategy group) used prereading questions and a discussion format, and the third group (i.e., question group) used questions to link the two information sources. Second and third grade books were used to provide 20 weeks of instruction for 40 minutes daily. The time was divided into four five-week periods for assessment purposes. At the end of the first five week time period, the strategy group scored significantly higher on inferential questions on

a test that included inferential and literal questions. After the third and fourth time periods, both the strategy and the question groups scored significantly higher than the basal group on the inferential questions. Hansen and Pearson (1983) found similar findings with second grade above level readers over a ten week time period. The only difference in the Hansen and Pearson study was significance of the two treatment groups on literal as well as inferential questions.

A second study using association strategies demonstrated the efficacy of using questions designed to provide organization of information under higher level, related ideas provided in texts (Rickards & DiVesta, 1974). The control condition used questions designed to promote learning of rote facts or ideas, or task irrelevant questions. The different questions were provided to 80 college sophomores after every two or four paragraphs of an 800 word prose passage. Results indicated that meaningful learning questions are superior to other forms of questions. These questions produced significantly more total recall ($p < .01$) (i.e., relevant, incidental, and subsumed facts and ideas) than the control condition questions. The meaningful questions contributed to the acquisition of both facts and ideas, apparently as a result of the information being learned in an organized, as opposed to a discrete manner. In addition, the most effective procedure involved the use of the meaningful questions after every two rather than four paragraphs. It

was suggested that this format reduced cognitive load by providing more frequent feedback.

The association studies indicate that strategies used to link information improve reading recognition and comprehension. As with other strategies, use of dialogue accompanied by feedback produced the most resilient effects in the shortest time period. Association links information within the text, and helps to create a greater understanding of a particular text. But good readers use information gleaned from text to enhance understanding by making generalizations to similar events and experiences. Evidence for strategies that enhance generalization can be found in reading research.

Generalization

Generalization is the process of linking events, morals, or information encountered in a text to similar situations occurring in other contexts. These contexts can include the reader's personal experiences, or events that occur within the community or world. These links assist a reader to see how text imposes meaning on experience, while personalizing response to it. Ausubel and Fitzgerald (1961) indicated that the most important influence on learning was the quantity, clarity and organization of existing knowledge related to a topic. Reference to prior experience can therefore assist a reader to interpret unfamiliar events presented in text. It has been demonstrated that adult readers draw these linkages

in the process of comprehension (Kintsch, 1974). Children spontaneously draw inferences based on prior experience and new experience. However, they do not always make these links as consistently when reading new material about unfamiliar topics.

Hayes and Tierney (1982) proposed that it is the intuitive organization of the mind that governs the interactive and recursive systems comprising knowledge. It is the plasticity of this knowledge that allows for continual assimilation of knowledge. The system includes knowledge constraints (i.e., knowledge specialization) and relaxation of those constraints (i.e., knowledge generalization). To evaluate this construct, the researchers designed a study to examine the use of analogy to aid comprehension. They hypothesized that analogy would transfer attributes of a familiar set of information to an unfamiliar one, and by doing so, new knowledge categories and relationships would be created that would enhance understanding of the unfamiliar text. In comparing comprehension of passages about familiar information (i.e., baseball) to unfamiliar information (i.e., cricket), four treatments with different order combinations of baseball and cricket, with and without analogies embedded in the passage, were compared to a control group exposed to the cricket passages combined with unrelated passages. The passages were read by groups of 19-21 subjects of eleventh and twelfth grade, average to above average readers, divided

into three subject interest levels. Results indicated that all treatment groups performed significantly better than the control group. The presentation of information related to the topic to be learned, regardless of mode of presentation (i.e., with or without analogy), or order of presentation of the two passages, influenced all measures of comprehension and learning from text (i.e., explicit and implicit) in all treatment groups. There was also a significant relationship between prior knowledge and learning and comprehension. When the mode of presentation did have an impact, it was always in support of use of analogy.

These studies indicate that linking new knowledge in text to related knowledge from the reader's personal experience is an effective strategy for enhancing reading and comprehension. Associations link information to prior information within the text, and generalization links information to experiences beyond the text. A third method of linking information is across semantic relations of time, location, causality, or purpose. Strategies used to create these links are supported by research examining the use of extensions.

Extension

Extension refers to the linking of ideas or actions according to semantic relationships maintained between them. They function to establish consequences of actions or states, or reactions to a situation. Extensions can reach both ways

in text, to establish predictions about unread text or to form relationships between new information and prior text. Many studies examining extensions have focused on assistance provided to readers in the form of guided questions.

Memory (1981, 1983) conducted two studies to evaluate the effectiveness of extension through use of guided questions. The first of the two studies evaluated the differential effectiveness of four types of prestatements and prequestions in enhancing comprehension of cause-effect statements, and the recall of significant information (Memory, 1981). The four experimental conditions and the control group included reading following a) main idea prestatement stating cause-effect relationships, b) a prestatement modeling an example of a cause-effect relationship not directly found in the text, c) a why question requiring the reader to identify the cause-effect relationship, d) an application prequestion presenting two situations and asking for the one analogous to the causal relationship, and e) no prestatements or prequestions. The treatment consisted of six weekly thirty-minute practice sessions in a sixth grade language arts class using five expository cause-effect passages. The 200 subjects were divided into low average versus average to good readers, and randomly assigned to the five treatment conditions. Posttest assessment consisting of comprehension of literal information and cause-effect relationships resulted in significant

improvement of the low average group between treatments one and two (i.e., favoring one) and between treatments two and three (i.e., favoring three) on the cause-effect questions. Treatment three was the most highly significant overall ($p < .02$). Results suggest that giving information about the two parts of the relationship and asking the reader to discover the cause-effect relationship established a meaningful search for relationships in the text.

Memory's second study (1983) examined the effect of using open-ended guided questions designed to call attention to main ideas and concepts. It was hypothesized that these questions would focus reader attention on relationships in the text. The instruction was used in three thirty-minute sessions over ten days, with 48 treatment and 48 control sixth-grade subjects subdivided into low average and good readers. Memory assessed improvement with multiple choice main idea questions related to the theme, and literal questions requiring recall of information. The treatment condition differed from the control in the use of the prequestions prior to reading text. There were no significant differences for the literal questions. However, low readers performed significantly better on main idea questions ($p < .005$). This demonstrated the usefulness of mediation for assisting readers to establish appropriate semantic links between information within text.

Boyd (1973) examined the effects of guided questions on comprehension, including the relational links between ideas. He hypothesized that there would be significance related to the number of questions (i.e., none, one or five), the placement of questions (i.e., before or after the text), and the type of questions (i. e., intentional and incidental). Subjects were 220 undergraduate college students who read a 2000 word, 20 paragraph prose text with the different placement, frequency and types of questions in ten alternative treatments. The alternative treatments included the placement of either one or five questions before the text, one or five questions after the text, combinations of the two (i.e., one or five questions before and after the text), or no questions before or after the text. On a fill-in-the blank test asking for implicit and explicit information, the researcher found no facilitative effect for the questions presented after reading or for no questions. Questions before and after the text provided additive significance. Use and type of questions were significant ($p < .01$) at posttesting, as was the frequency ($p < .05$) of the questions (i.e., one or five). The intentional questions, used to establish relationships within the text, were significant. The incidental questions, or questions used to simply cause the reader to attend to the facts, were least useful in producing change on the testing measure.

The use of questions to establish relationships of action, state, time, causality, and reaction is a form of extension that has been shown to effectively improve comprehension. The most significant results were demonstrated for comprehension of implicit information. Extension was also most effective with poor readers. Poor readers often have difficulty establishing and connecting ideas relationally and deriving implicit meaning from text. These findings suggest the use of extensions as one mediation strategy can be beneficial to poor readers when used within contextual reading.

Expansion

Part of the creative reconstruction process that the reader uses to interpret text can be accomplished through expansion, or the rewording of text into syntactically more complex sentences. Expansion assists the reader in establishing relationships between ideas by adding conjunctions, verb tense markers, or adjective and adverbial clauses. This is especially useful for the reader who has difficulty with implicit meaning. Expansion explicitly establishes the connections between ideas.

One study examined the use of sentence expansion techniques with 95 third grade subjects (Froese & Kurushima, 1979). This instruction consisted of eight one-half hour lessons in sentence expansion techniques. This was performed through interaction and discussion designed to provide

alternative ways to express meaning (i.e., deep structure) by combining words using different syntactic structures (i.e., surface structure). The treatment group was compared to three control conditions comprised of (a) Directed Reading Thinking Activity lessons (Stauffer, 1975), (b) free time to select activities, and (c) regular classroom instruction in grammar. Pretest and posttest measures consisted of a grammatical analysis of narrative composition and a cloze test measuring comprehension scores. The mean T-unit length (i.e., one main clause and any clause or non-clausal structure attached to or embedded in it) was determined from the narrative composition. The study resulted in the treatment group demonstrating improved comprehension of syntactically complex material, but no differences in T-unit production.

Expatiations, associations, generalizations, extensions, and expansions each addressed making sense of text at the phrase, sentence, or passage level. However, mediation during reading can be provided at the word level, as well. The strong relationship between word knowledge and comprehension (Singer, 1965) and the rapid acquisition of new vocabulary words from reading (Nagy, 1988; Nagy & Anderson, 1984; Nagy, Anderson, & Herman, 1987) highlight the importance of strategy use at the word level during reading. Semantic cues are one strategy that can be used to establish word meaning in context.

Semantic Cue

A semantic cue is used to help a reader retrieve or recognize a word that is difficult to decode or that is miscued, or to define an unknown word in context. Semantic cues assist a child to select the correct network of information, and consequently to maximize the probability of retrieving the correct word. Semantic cues can include synonyms, definitions, examples, or related words that are given at the point of difficulty during reading. They also can be accompanied by expatiations after the word is read.

Medo and Ryder (1993) examined differences in word recognition and comprehension under two types of instructional conditions. To evaluate the effectiveness of vocabulary instruction for expository text in a science classroom, they used a treatment and a control group of 31 matched pairs of eighth grade readers. The control group received the traditional classroom vocabulary instruction consisting of reading the chapter and defining the vocabulary terms. The treatment group was taught to activate prior knowledge and establish causal connections while reading difficult expository text. To accomplish these skills the treatment group received assistance comprised of (a) reading and discussing vocabulary to establish more in depth understanding of words and concepts, (b) semantic maps with oral discussion to establish the relationships of the text concepts, and (c) development of self generated questions.

The findings confirmed that enriched vocabulary instruction that provided multiple semantic cues to meaning improved word recognition and comprehension. The treatment group performed significantly higher on posttest measures of reading.

A second study used a loosely structured conversational format with three small groups of eleven remedial readers (Drum & Madison, 1985) to examine the effects of context and conversation on quality of word meaning. Three age groups (i.e., 12-13 years, 8-9 years, and 7 years) participated in a natural conversational format where ten conceptually related vocabulary words were introduced. For all groups, the change in understanding word meaning was significant when the amount of discrete information was measured during discussion in the sessions and on a posttest three week post instruction. The larger effects were evidenced in two of the three age groups determined to have used more interactive discussion. This determination was made by analysis of the dialogue used in each group.

Both short and long-term effects were analyzed in two studies designed to measure changes in vocabulary and comprehension (Anders, Bos, & Filip, 1984; Bos, Anders, Filip & Jaffe, 1984). The original study compared two groups of 31 learning disabled high school students using a 1,500 word expository (social studies) passage. The studies compared Semantic Feature Analysis (SFA) (Johnson & Pearson, 1978) to a vocabulary look-up condition (VLU). VLU is looking up

difficult words from a passage in the dictionary. SFA is predicated on the hypothesis that both learning and memory are enhanced by attaching new information to prior information. The SFA group participated in a session where words were discussed in relationship to prior knowledge, while the VLU group looked up the difficult vocabulary in the dictionary. The SFA group scored significantly higher than the VLU on all measures, including a passage comprehension test, conceptual test items, and vocabulary items. The second follow-up study (Bos, Anders, Filip & Jaffe, 1984) with the same group was designed to measure maintenance of vocabulary gains after six months. The SFA subjects maintained their advantage, continuing to score significantly higher than the VLU group on all posttest measures.

Contextualized vocabulary enrichment that provides semantic cues to the meaning and function of words within meaningful text has been shown to be more effective than more isolated instruction in vocabulary. Semantic cues help children to associate unknown or unrecognized words with prior knowledge, and thus aids in retrieval and comprehension. The most gains were attained when intervention incorporated interactional dialogue, suggesting the important role of mediation in learning to retrieve and recognize difficult words.

The studies reviewed thus far demonstrate that strategies used to organize text prior to and during reading,

and strategies that elaborate and clarify information as it is read have a positive effect on reading and comprehension. Organization and elaboration help to build an understanding of the components of the text and their interrelationships as the reader actively engages in reconstructing the text. But other research supports the use of strategies that review and integrate these components into a coherent whole.

Strategies For Reviewing and Integrating Text

Information is not remembered in the exact order or format in which it was initially encountered. Rather, the information is integrated with similar existing knowledge where the representation can be transformed, reordered, and categorized. The information is adapted to fit mental structures used to organize experience, so that main events and primary characters are given greater attention than minor actions and irrelevant details (Mandler & Johnson, 1977). One goal of Communicative Reading Strategies is to enhance this restructuring of text as an ongoing process during reading. Research supporting the restructuring of information is described in relationship to using mediation to engage the reader in paraphrasing, summarization, and rereading text.

Paraphrase/Summarization

Paraphrase is the rewording of text after it is read. Palincsar and Brown (1984) reported that both children and adults often list detailed information in the text rather

than paraphrase the information when asked to give summary information. They also concluded that the ability to paraphrase information that comprised a summary was extremely important to reading comprehension. Unlike a list, a paraphrase can simplify difficult vocabulary or define unfamiliar vocabulary through use of description or synonyms. It can also increase awareness of story structure and the relationship of ideas within a passage. The most important component of a paraphrase is the synthesis of the overall meaning of the text using shorter and simpler sentences, interpretations, or inclusion of implicit information.

Afflerback's study (1987), described earlier in the discussion of preparatory sets, revealed that successful readers periodically stop reading and allow time for a constructive process that results in conceptualization. It was noted that this occurred at the sentence, paragraph, or text level. The reader internally summarizes previous information, testing it in relationship to the tentative hypothesis formed prior to reading. After completing the reading task the reader returns to the text to form an overall impression or synthesis of the information, and to find actual text to support the summarized interpretation.

Summarization was also the subject of a study by Bean and Steenwyk (1984). Two treatment groups and a control group of 60 sixth grade students received treatment for twelve periods of 25-30 minutes over five weeks. Treatment

group one participated in a rule-governed summarization program. Treatment group two participated in an intuitive approach to summarization. The intuitive approach included teacher modeling, provision of macrorules, and teacher feedback. The control group participated in a direct approach to teaching summarization. There was a significant increase in the ability to summarize 16 paragraphs of text and to comprehend the text by both groups one and two ($p < .01$). Group three did not make any significant changes.

Another sixth grade population participated in a program using a model of summarization developed by Rinehart, Stahl, and Erikson (1986). A group of 70 sixth grade students, divided into a treatment and a control group, participated in summarization instruction with social studies text. The control group participated in traditional basal reading summarization instruction. The treatment group participated in a summarization procedure consisting of an explicit explanation of summary, modeling and talk through lessons, practice with feedback, progressively increasing length of text from paragraph to chapter, script lessons, and progressive self monitoring by the reader. Posttest measures revealed significance in the quality of notetaking ($p < .001$), decreased time in testtaking ($p < .001$), and recall of major ($p < .025$) and minor ($p < .05$) information for the treatment group.

Summarization also is one of two significant components in Reciprocal Teaching described later in this chapter. Palincsar and Brown (1984) have evaluated its effectiveness as a single strategy and in combination with other strategies. Empirical results indicated that summarization is more effective as an adjunct aide when used in conjunction with other strategies. Empirical research investigating the benefits of repeated readings has produced similar findings.

Repeated Readings

Studies have demonstrated that repeated reading is a powerful strategy for remedial and developmental readers in the regular classroom, as well as for the mature adult. As in the normal acquisition of language, rereading provides a medium for repeated exposure to grapho-phonemic word structure, morphological, syntactical, and contextual cues. A recent review of repeated reading research (Dowhower, 1989) revealed similar results across studies. First, when information recall is the goal, rereading was equal to or better than strategies such as notetaking, outlining, or summarization. Second, both high and low ability readers benefited, demonstrating increased factual information recall, while good readers were able to generalize to new materials. Third, rereading resulted in more rapid reprocessing of errors in text. Fourth, problem solving, recall of structural information, and recall of the most important semantic information were improved following

rereading. Fifth, rereading to children resulted in increased story comprehension and elicited more related conversation, and deeper questions about the text. Sixth, rereading resulted in increased expression, rate, accuracy, and comprehension in both treatment passages and unpracticed passages. Seventh, rereading resulted in parsing or chunking text into more meaningful units with fewer hesitations. Finally, using a series of passages was more effective than repeated reading of a single passage.

Improvement in comprehension and reading fluency has also been evident after repeated readings combined with adjunct aides to comprehension (Carbo, 1978; Dowhower, 1987; Herman, 1985; O'Shea, Sindelar, & O'Shea, 1985; Samuels, 1985; Taylor, Wade, & Yekovich, 1985). However, most studies have analyzed results of rereading or use of adjunct strategies alone, rather than a combination of the two. One example of the rapidity of change after a brief intervention period of rereading alone was demonstrated by a population of second grade students (Dowhower, 1987). After repeated readings of only five second-grade practice stories, second grade at-risk readers increased from 66% to 88% word recognition on unpracticed stories between pretest and posttest measures.

In a second study measuring effects of varying numbers of repeated readings, 30 at or above grade level third-grade students received one-to-one instruction (O'Shea, Sindelar,

& O'Shea, 1985). Subjects were also given instruction prior to reading some passages to either attend to comprehension or rate. Results indicated fluency and comprehension increased with the number of readings. Using one, three, and seven repeated readings, fluency improved significantly between one and three readings, and between three and seven readings. Comprehension improved between one and three readings. Retelling assessment measures were used and demonstrated improved recall for syntax, vocabulary and number of propositions. Accuracy and speed also improved. Rate improved significantly after cues to increase reading speed were provided, but comprehension decreased. This indicated that cueing to rate is less efficient than presenting cues for comprehension. It was determined that repeated reading facilitated faster reading, greater accuracy, and increased comprehension while simultaneously facilitating familiarity of semantic and syntactic patterns. Both attentional focus on comprehension and repeated readings were highly significant.

The previous two studies were with average to above average subjects. The research indicates poor readers often perform differently. Seventeen transitional readers who were average to above average in decoding but far below average in rate were randomly assigned to two repeated reading treatment groups (Dowhower, 1987). Group one used an assisted read along method (i.e., unison reading with the adult) and group

two used an independent unassisted method. Five passages were used in one-to-one instruction. The subjects met with the experimenter four to six times per week for approximatedly 15 minutes until they completed the task of reading each passage at 100 words per minute. Measures of rate and word recognition and comprehension and prosodic reading of new text resulted in significant improvement for both groups.

Rashotte and Torgesen (1985) reported increases in rate, but not in comprehension or word accuracy, with a group of learning disabled readers. Three treatment groups compared rereading using a high or a low number of shared words and contexts, and non-repetitive reading of the same number of passages. The only significant findings were increased rate for the passages with shared words. Contrary to other studies, this study did not include practice until a required rate was achieved, but discontinued each passage after four readings. The passages were used with a group of 12 nonfluent, learning disabled students ranging in age from eight years, six months to 12 years. The students were in grades two through five, with reading levels of third grade and below. Results indicated that rereading alone, without an adequate number of rereadings or more specific feedback, is useful but not sufficient for increasing reading rate, and of limited value for increasing accuracy or comprehension. A positive attitude toward reading also was expressed by

subjects in the rereading condition who indicated a desire to continue the program.

These studies demonstrate the effectiveness of repeated readings and the additive effectiveness when combined with feedback and appropriate cuing prior to reading. Readers with learning disabilities benefit less from rereadings than average or even poor readers when the rereading is not accompanied by additional support. Overall, research examining the efficacy of specific strategies provides strong support for the use of whole text, single strategies that organize, clarify, elaborate, and integrate, and repeated readings of text. Recently, the effects of using a combination of strategies presented in sequence have been examined.

Combination of Strategies

Morris and Nelson (1993) evaluated the use of specific reading strategies with ten inner-city second grade subjects. A sequence of strategy use was implemented, beginning with prior reading by the teacher and discussion with the subjects, and followed up by echo and choral reading of small segments of text by the children, partner reading, and independent reading with basal reader stories. Final analysis indicated that eight of the ten children showed notable changes from pretest to posttest performance. Attitudinal changes were an additional indication of success. The most relevant strategies for effecting change were

determined to be modeling natural language, flexibility in use of strategies, progressive exposure to material of increasing difficulty, performance feedback, and sufficient practice time. These results suggest that combining strategies was effective.

Based on the results of research examining strategy use for improving reading and comprehension, a variety of comprehensive programs that follow a systematic format have been developed and evaluated. These programs have been established for different age groups, and include varying combinations of strategies in their format.

Comprehensive Programs of Reading Intervention

Wasik and Slavin (1993) reviewed the existing research evaluating the efficacy of five one-to-one reading remediation programs. These included Reading Recovery (Clay, 1985) a program discussed in the following section; Success for All, (Madden, & Slavin, 1989; Slavin, Madden, Karweit, Dolan, & Wasik, 1992; Slavin, Madden, Karweit, Livermon, & Dolan, 1990) a preventative tutoring program in basic skills with a relationship between instruction and assessment; Prevention of Learning Disabilities (Silver & Hagin, 1990), a program designed to build perceptual skills using certified teachers in grades one to three; the Wallach Tutoring Program (Wallach & Wallach, 1976), a program using paraprofessional tutors to help students systematically master reading subskills; and Programmed Tutorial Reading

(Ellson, Barber, Engle, & Kampwerth, 1965; Ellson, Harris, & Barber, 1968), using paraprofessionals, parents or volunteers to improve perceptual analysis and decoding. They concluded that problems with intervention and evaluation methods render the results of many of these studies inconclusive. All five of the programs were characterized as being weakened in supporting evidence of effectiveness because of the similarities between the intervention and the evaluation methods, lack of clarity in actual implementation procedures, and differences within programs in the implementation of instruction between teachers.

Furthermore, while all of the programs used strategies derived from research, Reading Recovery was the only program to clearly articulate a theoretical base. While current views of reading recognize it as a language process (Cambourne, 1984; Goodman, 1976, 1982; & Smith, 1978), and theories of reading disabilities support a language deficit hypothesis (Lerner, 1985; Rubin & Liberman, 1983; Stanovich, 1986; Vellutino, 1979, 1982, 1987; Vellutino & Scanlon, 1982), none of the programs had components of syntactic analysis, prose structure, story grammar, or vocabulary comprehension. The review concluded that the programs that provided the most comprehensive models of reading and the highest quality of instruction demonstrated the most positive results (Wasik & Slavin, 1993).

Extensive research has also been done on Chapter I, a small group pull-out program for economically disadvantaged children. The evidence that is available suggests that the success of Chapter I, the most widely recognized and disseminated systematic reading intervention program, has been disappointing (Slavin, Karweit, & Madden, 1989).

Three programs that most directly address the oral and written language needs of at-risk children are Shared Book Experience (Holdaway, 1979), Reading Recovery (Clay, 1982), and Reciprocal Teaching (Palincsar & Brown, 1984). The current research examining the efficacy of these programs demonstrates positive results for many at-risk children.

Shared Book Experience

Shared Book Experience (SBE) was developed by Holdaway (1979) in New Zealand. The purpose of this program is to integrate children's early language learning with early literacy. Reutzel, Hollingsworth, & Eldredge (1994) compared Shared Book Experience with a program called Oral Recitation Lesson (ORL) (Hoffman, 1987). Ten shared characteristics of the two programs include use of (1) repetition, (2) modeling and demonstration, (3) direct instruction or explanation, (4) feedback, (5) support, (6) fluency practice, (7) easy materials, (8) clear purpose, (9) engagement of readers, and (10) development of reading skills (i.e., comprehension, vocabulary, fluency and decoding). The two programs differ in goals. SBE focuses on active participation, knowing the

characteristics of books, learning convention and patterns of written language through demonstration, use of reading strategies, development of a sight vocabulary from big books, and the exploration of three levels of cues embedded in language (i.e., semantic, syntactic, and graphophonemic). The emphasis is on understanding how all language cueing systems can be applied simultaneously when orally reading familiar, complete text. Rereading is at the whole text level, and story structure and prediction are addressed more indirectly than in ORL. Interactive discussion and prediction is an integral part of the program.

An Oral Recitation Lesson includes modeling oral reading, increasing participation and interaction during oral reading, focusing on comprehending story structure and vocabulary, and improving reading fluency through practice and performance of story segments. Rereading is at the text segment level rather than whole text. ORL is a more metacognitive program with a strong focus on fluency and performance of oral reading.

In this comparison study, four classrooms totaling 79 second grade students were divided into three ability groups based on first grade SAT reading achievement scores. Subjects were randomly assigned to the two treatments. Both standardized measures and researcher developed reading/retelling measures demonstrated significant differences favoring SBE in comprehension of implicit

questions (i.e., inference), word analysis, and oral reading errors that did not maintain semantic or syntactic sense. This was especially true for the reading errors of the low ability group. Other measures of fluency, comprehension, and vocabulary showed significant improvement but were equal for the two instructional routines. ORL subjects did not show significant advantages on any assessment measures.

One other study compared SBE to a phonics-based program (Ribowsky, 1985) in two kindergarten classrooms. The measures of general reading achievement showed a significant statistical effect favoring SBE. A second program, called Reading Recovery, was directly influenced by SBE. It was developed in New Zealand with a target population of at-risk first grade readers, and has been widely used in American schools in recent years.

Reading Recovery

Reading Recovery is the only current comprehensive remediation program which focuses specifically on language. It is also the only one-to-one program strongly supported by a theoretical foundation (Wasik & Slavin, 1993).

Reading Recovery was developed in New Zealand by Marie Clay (1982). It was developed as a result of Clay's observation of young children during developmental stages when literacy was emerging. Her early research was influenced by Holdaway's (1979) development of Shared Book Experience and was an effort to identify early reading

behaviors that could be used to provide insights into early reading difficulties. One of the results of this observation was the development of an intervention procedure termed Reading Recovery (Clay, 1982, 1993). Reading Recovery is a one-to-one approach directed toward at-risk first grade readers. Reading Recovery views literacy as a process that takes place because of a child's desire to discover the relationship between oral and written language. Basic principles include reading and writing as connected processes, a need for reading practice through use of repeated readings, the importance of development of meaning through the use of flexible and integrated strategies, a need to recognize reading as a meaning-making process, a need for early remediation, and the recognition that children with reading difficulties do make progress.

Coining the term "emergent literacy," Clay (1982) recognized that literacy develops along a continuum, beginning much earlier than previously reported. Clay indicated that the process was a transformation of knowledge into new ways of responding.

Program Components

Some of the components of the Reading Recovery program are the use of certified first grade teachers, weekly training of the teachers for one school year, and continued participation of teachers in the classroom while functioning as a Reading Recovery teacher for one-half of the day. The

lowest 20% of the first grade students are provided 30 minutes of daily one-to-one tutoring for up to 60 sessions. These sessions consist of rereading text, daily teacher analysis of reading accuracy, writing with teacher support, and reading new information. Clay emphasized that the most important components of Reading Recovery are strong teacher training, one-to-one instruction, and appropriate selection of text difficulty. Specific strategies include (1) directional movement, (2) one-to-one word matching, (3) self-monitoring, (4) cross-checking for meaning and phonemic structure, and (5) use of multiple cues and self correction. The implementation of a typical lesson is relatively inflexible and includes rereading familiar books, writing messages or stories and rereading them, hearing sounds presented in an isolated activity, cutting apart sentences and reconstructing them in correct order, and introduction of new books with adult support for attempted readings.

Dissemination of the program in the United States began in 1984 at Ohio State University. It is currently being used in the United States as an intervention program for at-risk first graders. A large body of research now provides support for this program.

Reading Recovery Research

Research of Reading Recovery in New Zealand reported good short and long-term results. However, this research only evaluated students who were successfully discontinued

from the program (i.e., were achieving at grade level by the end of 60 sessions). It did not consider its effectiveness with those who did not successfully complete the program, so the outcomes for these readers was unknown (Pinnell, 1989; Pinnell, DeFord, Bryk & Seltzer, 1994; Tierney, Readence, & Dishner, 1990; Wasik & Slavin, 1993).

Several studies have been conducted by the Ohio State University group to evaluate different aspects of Reading Recovery in the United States (Pinnell, 1985, 1989; Pinnell, Lyons, DeFord, Bryk & Seltzer, 1991). Two related longitudinal studies were conducted by the same group. Both studies (Pinnell, 1985, 1989) compared Reading Recovery to traditional Chapter 1 and classroom basal instruction. Children in the lowest 20% of their classes were randomly assigned to treatment and control groups. Results were not definitive for several reasons. By third grade, those children who were not successfully discontinued tested below their classmates and the control group. This was 27% of the original 20%, a significant portion of students (Edford, Pinnell, Lyons, & Young). Another compromising factor was the close relationship between intervention strategies and test measures, both developed by Clay (1982, 1993). However, the children who successfully completed 60 or fewer sessions were performing significantly better than the controls, and were on grade level.

A third study by the Ohio State Group (Pinnell, Lyons, DeFord, Bryk & Seltzer, 1991) compared Reading Recovery to four other conditions, including Reading Success, Reading Recovery conducted in small groups, direct instruction of skills, and Chapter 1. Reading Success was a Reading Recovery one-to-one program whose teachers were trained in an intensive two-week session versus the year long training. Standardized testing at the end of first grade resulted in few notable differences between any of the five treatments. However, the Reading Recovery conducted in small group effect was the largest on the standardized test. Posttesting at the beginning of second grade revealed positive results for Reading Recovery one-to-one and for Reading Recovery small group. The Reading Recovery Success program was the only other treatment to test positively or to score higher than Reading Recovery small group on measures developed by Clay (1982). As in the previous studies conducted by the research group, intervention and test measures were similar, and questions remain regarding retention of the original subjects in the program due to poor performance of those subjects. The equal performance of children seen in small groups suggests that one-to-one instruction may not be a necessary component of the program's success.

In a review of all past Reading Recovery research, Boehnlein (1987) reported that after an average of 15-20 weeks (i.e., 30-40 hours or 60-80 sessions), 90% of the

children in the bottom 20% are reported to read at a level commensurate with the class average and to require no further remediation. The Ohio Reading Recovery studies found that the gains were maintained four months later. Not only did the treatment group make greater gains than a control group of at-risk subjects who received no help, but also made greater gains than classmates who originally scored above the bottom 20%.

The factors related to success in the Reading Recovery program were examined in a study conducted by Handerhan. They evaluated the sociolinguistic behaviors of four highly successful teachers and four unsuccessful teachers during Reading Recovery sessions. Results indicated that the more successful teachers were more flexible in use of strategies and engaged children in reading for meaning more consistently (Handerhan, 1990).

Reading Recovery reportedly supports language and meaning making. In reality, the theoretical foundation is somewhat unrelated to the lesson framework. The approach focuses more on mediating skills such as letter-sound correspondence, sound blending, and accurate word recognition. Thus, Reading Recovery is more text based than reader based. Reading Recovery is a complete program that utilizes several strategies in a one-to-one program. However, dialogue is not a component of the program. Furthermore, while recognizing that the child needs control

of oral language and adequate prior knowledge to be successful in reading, Clay (1982) does not provide information on the parameters of "adequate" or on the relationship of these to the reading process. "Control" of oral language and "adequate" prior knowledge are general statements that do not address the complexity of language or its direct relationship to word recognition and comprehension during the reading process.

While posttest results (Deford, Pinnell, Lyons & Young, 1988) report a success rate of 82% to 86% of discontinued students, with two-thirds of those students reading equal to or above their peers, these results were based on measures developed by Clay (1982) and closely related to the intervention tasks. Furthermore, no systematic research has been conducted to ascertain which students are among the 27% who do not successfully complete the program. It is possible that these are the children with language delays or disorders. These children may not receive sufficient assistance within Reading Recovery to acquire control of oral language or the prior knowledge Clay (1982, 1993) considers to be critical for success. Another program that presents a more specific focus on language and prior knowledge is Reciprocal Teaching (Palincsar & Brown, 1984, 1988, 1989).

Reciprocal Teaching

Palincsar and Brown (1984) developed a program termed Reciprocal Teaching that is described as dialogue between

teachers and students using four strategies (Palincsar & Brown, 1984; Palincsar, 1985; 1987). Palincsar characterizes Reciprocal Teaching as a "metascript" (Gallimore & Tharp, 1983), or verbal instruction that follows a general format and guidelines. It uses particular strategies while simultaneously allowing for responsive teaching. The method supports the premise that explicit, metacognitive training enhances reading comprehension.

The Reciprocal Teaching lesson format consists of the teacher initially explaining the four strategies of the program to the students (i.e., questioning, summarization, clarification, and prediction). This is the formally structured component of the program. The remainder of the program requires continual decision making relative to content and direction of the instruction. Participants take turns assuming the teacher role, becoming responsible for leading the dialogue. The "teacher" uses a text segment to generate questions for the group, summarizes the segment, attends to any level of the text needing clarification, and makes predictions about the next portion of text. Questioning and summarization are used after each text segment, while clarification and prediction are used as needed. Clarification can be used to assist in understanding difficult vocabulary, unclear referents, complex sentence structures, and relationships between sentences. A continuous cycle of the four strategies is coupled with

modeling, corrective feedback and encouragement, promotion of self-evaluation, and challenging students at individual levels of competence. It is recommended the the readers work in small groups for a minimum of 20 days for 30 minutes per day.

Several studies support the effectiveness of Reciprocal Teaching. These studies, used primarily with remedial readers in junior high school, utilized remedial reading teachers instructing in groups of seven to seventeen middle school students who were adequate decoders but poor comprehenders. A summary of the initial research (Palincsar and Brown, 1984; Palincsar, 1985, 1987) indicated that a) students markedly improved in use of the four strategies, b) quantitative improvement in comprehension was notable and durable, and c) there was generalization to the classroom and to similar but distinct tasks. Other studies (Palincsar, 1985, 1987) compared Reciprocal Teaching to three more directed variations of the procedures, and then to isolated use of each of the strategies. Results continued to demonstrate the largest and most reliable gains by full use of the original method.

Another study with groups of seven to fifteen students used Reciprocal Teaching by classroom teachers trained in four inservice programs (Palincsar, 1986). Seventy percent of the treatment group versus 19% of the control group (i.e., receiving skill instruction) met the criterion. This result

was not as powerful as previous studies with remedial reading teachers, but was significant.

Palincsar and Brown are in the process of using Recprocal Teaching (Palincsar, 1986) with groups of first grade students. In a modified version of Reciprocal Teaching, classroom teachers read the text aloud, and then participate in dialogue using the same four strategies. Children are divided into groups of six children each, four identified as at-risk and two serving as models. The at-risk students are selected by teacher observation and informal ratings and had been identified for referral to special education services. Pretesting indicated that the at-risk students scored in the 25th percentile or below on a standardized measure of listening comprehension and scored 30% or below on a criterion referenced test.

The intervention, aimed at listening comprehension, occurs in 30 minute sessions for 20 consecutive days. The texts are identical for each group. They are at a third grade readability level and are selected for interest and organization. New text is introduced by allowing the readers to predict, followed by continuing cycles of the teacher reading portions of texts with pauses to generate questions, summarize, predict, and clarify. Preliminary results are favorable although final results are in process.

In a review of reading comprehension strategies (Maria, 1990), Reciprocal Teaching was Maria's method of choice.

Anecdotal comments recommended it as the most effective method for use in comprehension instruction with children of all ages who are having difficulty in reading. However, the program was initially developed for use at the middle school level, with only recent attempts to modify it for use in earlier grades. Results of its use with earlier grades are not available.

Summary

Overall, the research demonstrates that language based strategies are effective in facilitating reading and language. Flexibility in the use of these strategies, use of natural whole language, performance feedback in the form of strategies, rereading of text, teacher understanding of language, and reading for meaning were determined to be important program components for facilitating change. Most studies examined scaffolding strategies in isolation. Most comprehensive programs describe components, but the strategies within them for improving reading are not well defined. When they are well defined, they do not include specific syntactic, semantic or pragmatic intervention strategies (Wasik & Slavin, 1993). While there is recognition that reading failure is often a result of phonological, semantic, and syntactic language difficulties (Catts, 1986; Fry, Johnson, & Muehl, 1970; Kamhi, Catts, Mauer, Apel, & Gentry, 1988; Katz, 1986; Vogel, 1974, 1977), and that strategies addressing these difficulties should be

utilized to facilitate word recognition or comprehension, most intervention strategies currently in use do not address these areas of language (Catts, 1993).

Communicative Reading Strategies

Communicative Reading Strategies (Norris 1985,1988) is a reading approach that is based on the interactive meaning-making process between the author (i.e., the text), the reader, and an adult who functions to facilitate written communication through the use of a combination of scaffolding strategies. The approach is based on the assumption that reading is a language process that requires the simultaneous and balanced coordination of multiple levels of oral language (i.e., phonology, morphology, syntax, semantics, and pragmatics), knowledge (i.e., existing concepts, event structures, scripts, and new information), and text (i.e., letter-sound, orthographic, word, phrase, sentence, and whole text). The strategies are designed to be used to support the reader at any or all levels of language, knowledge, and text. The responsibility for word recognition, comprehension, and fluent reading is shared between the adult facilitator and the reader.

Supporting Research

Four recent studies with low socioeconomic children have demonstrated positive results when using Communicative Reading Strategies with different age groups (Badon, 1993; Hernandez, 1989; Hoffman & Norris, 1994; Landeche, 1992).

These studies examined the use of CRS individually and in groups.

Hernandez (1989) compared Communicative Reading Strategies to a basal reading program with low-achieving third grade subjects. Changes in language, reading fluency, comprehension, and writing were measured using a reading inventory, story retelling, writing, and an informal test of comprehension. Both groups received intervention for 30 minutes a day over a four-week treatment period. The CRS group showed statistically significant improvement over the basal reading group in reading comprehension scores. Greater gains were demonstrated by the CRS group in all other measures, although not at a level of significance. These included gains in reading skills such as word recognition and instructional reading level, but also in language based tasks such as story retelling ability, inferencing ability, spontaneous writing ability, and thematic maturity in writing. These results demonstrated that measurable changes in overall written and oral language abilities could be obtained within a short time period, and suggested that a longer intervention period would potentially result in significance on these measures, as well.

Landeche (1992) used a modification of CRS with a Head Start preschool population over a one year treatment period. The modification focused greater attention on telling the story from elaborated discussion of the pictures prior to

scaffolding the reading of the print. This study resulted in significant short and long term gains in the treatment compared to the control group in knowledge related to literacy. Statistically higher gains were attained on the Test of Early Reading Ability (Reid, Hresko & Hammill, 1981) by the modified CRS group, with higher gain scores in all categories of items, including meaning, alphabet knowledge, and print conventions. Similarly, on an assessment instrument developed by Clay (19), the Concepts About Print test, the CRS condition resulted in reliably greater gain scores. The two classrooms implementing the CRS condition showed the highest end-of-year gain scores on the school-administered achievement test for all of the Head Start programs in the district.

Badon (1993) compared CRS to a directed reading program using an alternating treatment design for single subjects with four low SES first graders. The significant differences and the trends in the data all favored the CRS treatment. The findings indicated that the CRS condition produced fewer reading miscues, and an increased rereading rate than the alternate treatment. In addition, the CRS condition resulted in the inclusion of more story grammar components and episodes, longer story retellings, fewer maze behaviors (i.e., revisions, false starts, message inaccuracies, repeated propositions, and irrelevant perceptual details) and

inclusion of more interepisodic relations during the story retelling measure.

Hoffman and Norris (1994) taught two classroom kindergarten teachers to implement the modified CRS procedure. The ten children with the lowest scores on measures of language and reading at the beginning of the school year were compared to ten matched subjects from two classrooms implementing instruction that focused specifically on learning the alphabet and sound-symbol association. Results showed reliably greater gains for the subjects in the CRS condition, with the greatest gains attained for the meaning subtest of the Test of Early Reading Ability. Even though the control classrooms specifically focused on the alphabet, letter-sound knowledge was equal for children in the CRS condition.

Two descriptive studies examined the teacher-student interactions that occurred within the modified CRS classrooms (Taylor-Jones, 1993; Waters, 1993). Results showed that the teacher who was most effective used a higher rate of interactive scaffolding strategies, especially those that served to expand and expatiate.

Although not investigated in a controlled study for specific effects on language development, five years of after-school clinical programs utilizing CRS with school age children from kindergarten through eighth grade have resulted in consistent, quantifiable gains in both language and

reading performance on standardized tests administered at the beginning and post intervention. For example, clinical results for a group of 19 subjects following seven weeks (i.e., 20 hours) of intervention resulted in an average percentile gain of 11 on the The Test of Language Development (Newcomer & Hammill, 1988), and an average percentile gain of 12 in reading comprehension and 6 in reading recognition on the Grey Oral Reading Test (Bryant & Wiederholt, 1986).

The results of these early studies suggest that CRS is an effective method of increasing the print knowledge, reading recognition, comprehension abilities, and language skills for both emergent readers and poor readers. The greatest effects occurred when the teacher used scaffolding strategies at a high rate, and when the strategies were used to respond to the children's productions. When CRS was used with poor readers, many trends in the data showed advantages to CRS that did not reach statistical significance. None of these small group studies exceeded four weeks of treatment. Clinical records indicate increasing changes in language, word recognition, and comprehension when CRS has been used over an eight week period, but no control comparisons were available. Thus, there is a need to explicitly measure the effects of using CRS in a small group over a longer time period on reading and language abilities.

Questions

This study examined the effects of Communicative Reading Strategies on reading and language performance of at-risk first grade students who were identified as poor readers. The specific research questions of this study were:

Question 1: Will at-risk first grade readers receiving treatment using Communicative Reading Strategies demonstrate significant improvement in reading fluency and comprehension compared to a control condition?

Question 2: Will at-risk first grade readers receiving treatment using Communicative Reading Strategies demonstrate significant improvement on measures of word analysis skills compared to a control condition?

Question 3: Will at-risk first grade readers receiving treatment using Communicative Reading Strategies demonstrate significant improvement in language performance as measured on standardized language measures as compared to a control condition?

Question 4: Will at-risk first grade readers receiving treatment using Communicative Reading Strategies maintain greater gains over time

intervals of four months (fall school term), four to nine months (spring school term) and one year compared to a control condition?

Eighteen measures of word recognition, comprehension, phonemic awareness, vocabulary, and grammar were used to assess reading and language improvement.

METHODS

The purpose of this study was to determine both the short and long term effects of a communication based facilitation of oral and written language learning. The experimental treatment involved the use of Communicative Reading Strategies, or one technique that is consistent within Whole Language Intervention (Norris, 1989, 1991; Norris & Hoffman, 1993). Communicative Reading Strategies maintains the theoretical principles of Whole Language learning, including a transactional process, and social mediation of the meaning-making process within natural, holistic contexts, resulting in whole-to-part learning, while providing support at a level of intensity and specificity far greater than that encountered in interactions typically experienced in normal development. The emphasis on intervention in practice results in differences compared to the methodologies typically observed in language arts programs implementing Whole Language. For example, in intervention, practices such as homogeneous grouping and scaffolding strategies are used to maximize the number of turns, level of input, and type of feedback given at the appropriate level to meet individualized needs of learners within a short intervention session.

A pretest-posttest control group design (Borg & Gall, 1989) was used, with the experimental subjects receiving

eight weeks of instruction using the CRS treatment, while a matched control group received no treatment. The control condition section in this chapter gives a detailed description of the amount and type of reading or literacy experiences engaged in over the course of the eight-week intervention period by the control group. Dependent measures included standardized tests of word recognition, passage recognition, passage comprehension, word analysis, informal measures of oral storybook reading, and standardized tests of language reception and expression.

Subjects

The subjects were two groups of children between the ages of 6 years 5 months and 8 years 5 months who had completed the first grade, exhibited essentially normal cognitive and sensory abilities, and were identified as poor readers in accordance with the criteria described below (See Tables 2 and 3). There were nine subjects in the treatment group and twelve subjects in the control group. Classroom teachers from each child's school recommended children for participation who met the criteria specified in Appendix A, including (1) below average reading ability, (2) apparent frustration and/or poor attitude regarding reading, and/or (3) achievement in reading below the child's apparent potential. Invitations for participation were distributed to the parents of recommended children by the classroom teacher. Subjects were selected from those returning consent forms

(see Appendix B). This form indicated whether the child would be available for participation in an eight-week summer intervention program and/or whether the child would be available for posttesting during the months of August, 1993, December, 1993, and May 1994. This form also granted permission to examine school records for a history of speech-language, learning, reading, or other special educational services.

Subject Selection Criteria

Subjects participating in the experimental and control groups met the following criteria:

1. Identification by the first grade classroom teacher as exhibiting poor reading abilities according to the criteria established in Appendix A;
2. Chronological age between 6 years 5 months and 8 years 5 months by June 1, 1993, and completion of at least one year of first grade placement;
3. English as the native language of the child and the home where the child resides;
4. No participation in any other instructional or remedial program for oral or written language abilities during the intervention period (June, through August, 1993);
5. Cognitive abilities in the average or above

Table 2

Characteristics of Subjects, Classified by Condition: Treatment

				GORT					TOLD	
Subj.	AGE	SEX	CMMS	RATE/ACC/COMP=TOT				SS	SEM.	SYN.
1	6-8	M	111	0	3	3	= 6	8	26	68
2	6-7	M	99	0	3	2	= 5	9	20	34
3	6-11	F	103	0	0	1	= 1	9	22	65
4	8-1	F	88	0	1	3	= 4	4	14	44
5	7-4	M	106	0	1	2	= 3	8	32	60
6	7-3	F	101	0	1	2	= 3	8	27	61
7	7-3	F	96	0	0	2	= 2	8	27	41
8	7-1	F	112	0	1	4	= 5	8	23	59
9	7-0	M	98	0	0	4	= 4	8	23	60
M	7-13		101.6			3.67		7.78	23.78	54.67

TOT=total GORT-D rate, accuracy, and comprehension raw scores on first passage of Paragraph reading subtest
SS=GORT-D Paragraph Reading Standard Score
SEM=raw score totals of the TOLD-P Semantic subtests (i.e., Picture Vocabulary and Oral Vocabulary)
SYN=raw score totals of the TOLD-P Syntactic subtests (i.e., Grammatic Understanding, Sentence Imitation, and Grammatic Completion)

Table 3

Characteristics of Subjects, Classified by Condition: Control

				GORT					TOLD	
Subj.	AGE	SEX	CMMS	RATE/ACC/COMP=TOT				SS	SEM.	SYN.
1	7-4	M	96	0	2	4	= 6	8	34	67
2	6-8	M	109	0	0	4	= 4	9	20	51
3	6-11	F	103	0	0	3	= 3	8	24	46
4	7-6	M	92	0	1	2	= 3	9	19	40
5	6-9	F	91	0	1	1	= 2	8	26	45
6	7-9	M	102	0	1	2	= 3	6	29	44
7	7-10	M	89	0	1	2	= 3	6	23	56
8	7-4	F	105	0	2	3	= 5	8	25	65
9	7-4	F	110	0	2	4	= 6	8	35	64
10	6-8	F	106	0	2	3	= 5	9	27	42
11	6-6	M	111	1	2	1	= 4	9	30	49
12	6-8	M	89	0	0	1	= 1	8	16	26
M	7-10		100.25					3.75	8.00	25.67	49.58

TOT=total GORT-D rate, accuracy, and comprehension raw scores on first passage of Paragraph reading subtest
SS=GORT-D Paragraph Reading Standard Score
SEM=raw score totals of the TOLD-P Semantic subtests (i.e., Picture Vocabulary and Oral Vocabulary)
SYN=raw score totals of the TOLD-P Syntactic subtests (i.e., Grammatic Understanding, Sentence Imitation, and Grammatic Completion)

average range, as evidenced by an age deviation score of 88 or above on the Columbia Mental Maturity Scale (CMMS) (Burgemeister, Blum, & Lorge, 1972);

6. Hearing acuity within normal limits, as defined by passing a pure tone hearing screening at 20 dB for the frequencies 1000, 2000, and 4000 Hz;
7. Performance at or below a standard score (SS) of eight or a raw score of 5 or less on the first reading passage of the Paragraph Reading subtest, scored for word recognition, rate, and comprehension of material read, of the Grey Oral Reading Test - Diagnostic (GORT-D) (Bryant & Wiederholt, 1991.)

Procedures

Experimental and control subjects were matched for gender, socioeconomic level as determined by participation in the school free or reduced cost lunch program by the public school subjects or by a tuition reduction program by the private school subjects, race, previous educational history, and for equal performance on as many of the criteria below as possible. From those consent forms returned with an indication that the child would be available to participate in the summer intervention program the twelve best pairs were matched. Tables 3.1 and 3.2 reflect the characteristics of the subjects, classified by condition. It includes each

subjects age, sex, and CMMS score. The GORT-D rate, accuracy, and comprehension raw scores on the first passage of the Paragraph reading subtest, and the total (TOT) of these three raw scores is included with the Paragraph Reading Standard Score. In addition, it includes the raw score totals of the TOLD-P Semantic subtests (i.e., Picture Vocabulary and Oral Vocabulary) and Syntactic subtests (i.e., Grammatic Understanding, Sentence Imitation, and Grammatic Completion subtests). The means of the age, CMMS, TOT, SS, and the raw scores of the Semantic and Syntactic subtests are also included.

After selection of the matching pairs, the subjects were randomly assigned to the experimental and the control groups. From the remaining pool of children available for the posttestings, twelve control subjects were selected who constituted the best matches for the experimental subjects. Parents were notified that their child had been selected and arrangements were made for the summer intervention program or posttesting.

Twelve subjects began the treatment program in June, 1993. One subject withdrew from the study the first week due to transportion complications and two subjects did not attend with enough consistency to be included in the final analysis. This resulted in a treatment group of nine subjects.

Forty-seven potential subjects for whom consent forms were returned were selected based on meeting the

characteristics specified in the subject description and the first five criteria above. This pool of potential subjects were further evaluated for cognitive, hearing, and reading abilities by the administration of the individual diagnostic or screening procedures designated in criteria six and seven above. The results of the tests CMMS, Test of Language Development-Primary (TOLD-P) and GORT-D were used to match the subjects. Means and standard deviations of the scores on each of these measures, as well as on the informal measures were compared prior to treatment. Two-tailed t-tests revealed no significant differences between the groups on any measure prior to treatment.

Pretest and Posttest Measurements

A series of standardized (i.e., Quantitative) and informal assessment procedures were administered. The assessments were conducted initially no more than three weeks prior to treatment and again immediately following treatment. Testing to determine long term effects were conducted at mid semester (December, 1993) and at the end of the school year (May, 1994). When available, alternate forms of the same test were given pre-treatment and post-treatment. The pre-treatment test was conducted in a quiet location at each subject's elementary school during regular school hours between the dates of May 17 and May 28, 1993. The posttest was conducted at the LSU Speech and Hearing Clinic during the period from August 6 through August 19, 1993. The second and

third posttests were conducted at each subject's school in December 1993 and May 1994. The assessments were conducted by graduate students in the Department of Communication Sciences and Disorders who were experienced with both standardized and informal assessment procedures, but were unfamiliar with the subjects and blind to the condition to which each subject was assigned.

Quantitative Measurements

The following battery of standardized tests of oral reading abilities and oral language performance, were administered:

1. In addition to the Paragraph Reading subtest administered during subject selection, the Grey Oral Reading Test - Diagnostic (Bryant & Wiederholt, 1991) was completed, including the Decoding, Word Attack, Word Identification / Semantic Meaning, Morphemic Analysis, Contextual Analysis, and Word Ordering subtests. The GORT-D included two composite scores. The first, or Contextualized Reading score, was the Paragraph Reading subtest which included word recognition (i.e., accuracy), reading rate (i.e., rate) and comprehension. The second, or Word Analysis score, was the total for the six supplemental subtests and the number of words identified on the Word Identification subtest combined. This test

was therefore used as a measure of oral reading and word structural knowledge. Table 4 presents the miscue analysis items for marking the GORT-D Paragraph Reading subtest and Bear and the Fly.

2. The Test of Language Development - Primary (TOLD-P) (Newcomer & Hammill, 1988) was administered to assess linguistic abilities. This test was used to measure knowledge of standard English syntax, morphology, phonology, and semantics in both receptive and expressive language modes. The TOLD-P included two composite scores. The first, or Semantics score, was a composite of Picture Vocabulary and Oral Vocabulary. The second, or Syntactic score, was a composite of Grammatic Understanding, Sentence Imitation, and Grammatic Completion subtests. Word Discrimination and Word Articulation were measured individually.

Informal Measurements

Samples of oral language and oral reading were elicited from each subject and analyzed for evidence of complexity, fluency, and coherence, as described below:

1. An oral reading sample was obtained to provide an in depth examination of word recognition of connected text. The text was written to correspond to the story line suggested by the illustrations in the

wordless picture book The Bear and the Fly, (Winter, 1976). The text was written to progressively increase in linguistic and reading difficulty, beginning at a primer level of readability and ending at a second grade level. The reading passages were designed according to the following procedure:

a) The twenty-eight pages or 2-page combinations that represent a new event in the book were divided into three, nine to ten-page sections, each which corresponded to a different readability level of text (i.e., from primer through second grade.)

b) The vocabulary for each graded section of the story was selected from the recommended grade level assignment of vocabulary words listed in the source A cluster approach to elementary vocabulary instruction (Marzano & Marzano, 1988.) At least least 65% of the content words for each passage were selected from the targeted grade level; additional content and function words were rated at the targeted grade level or below, with the exception of a 10% allowance

Table 4

Miscue Analysis Items for GORT-D Paragraph Reading Subtest and Reading of The Bear and the Fly

Miscue Symbol	Symbol Explanation
s	word supplied after 5 seconds with no attempt or 10 seconds of attempted sounding out
word	word omitted; no attempt shown
\	failure to attend to punctuation
sc	self correction
(word substitution)	substitution of one word for another
(WE)	read with appropriate expression
(WBW)	word-by-word reading

for words above the targeted grade level when necessary to form a semantically and syntactically appropriate sentence.

c) The average number of sentences and syllables per 100 words for each graded section of the story were within the range designated for that grade level on the Fry Readability Graph (Fry, 1977.) The average range of sentences for primer was greater than 25 sentences, for first grade was 10 to

25 sentences per 108 to 134 syllables, and for second grade was 7.7 to 10 sentences per 108 to 142 syllables.

d) The passage of written text for each page of the book consisted of three sentences, for a total of fifteen sentences at each grade level of difficulty. The total number of words differed across grade levels, ranging from 75 words (primer level passage) to 139 words (second grade level passage.)

e) The picture and the text for the first two events at each readability level maintained a near relationship (Golden, 1990) in which the meaning communicated by the picture and the text overlapped and both refered to explicitly stated and pictured (i.e., descriptive) information. The picture and the text for the last three events at each readability level maintained a distanced relationship in which the meaning communicated by the picture and the text presented different information, and the meaning was only implicitly suggested (i.e., inferential.)

Validity. A Fry readability formula was

applied to verify the graded level of each four-page passage. Four independent judges (two Ph.D. professors in Communication Sciences and Disorders, and two Ph.D. professors in Reading) rated the passages for the near-to-distanced relationship between pictures and text, and for the explicit-to-implicit meaning of the text. The appropriateness of the book and the text was verified by having ten first-grade children with average or above achievement orally read the text and answer the comprehension questions. If the word recognition or comprehension scores attained by the subjects was below 90% on any section of the text at or below their grade level, that part of the passage was rewritten.

Administration. The oral reading sample was obtained by the primary researcher. The children were asked to read the story orally. The child was prompted to skip any unknown word after attempting to identify it for five seconds. They were informed that each time a page is turned, a question would be asked about the passage they had just read. The oral reading sample was audiotape recorded

and was used to mark miscues and to time the passages on a written transcript of the story (Appendix C). The children were informed of the use of the tape recorder.

Scoring. The oral reading of the graded passages were analyzed using the miscue analysis procedure described in the Grey Oral Reading Test - Diagnostic (Bryant & Wiederholt, 1991). A percentage of meaning based vs. phoneme miscues were calculated. Miscues on 25% of the words in each of two consecutive reading levels constituted a ceiling. The reading of the passage was timed, and the number of seconds required to read each graded section of the passage was calculated.

Reliability

Quantitative Measures. Twenty graduate students in the Department of Communication Sciences and Disorders administered and scored the standardized quantitative measures. These evaluators participated in a four-hour training session, during which time testing and scoring procedures for the GORT-D, the TOLD-P and the CMMS were reviewed. Two example tests of each measure were scored jointly by the researcher and the testers. Feedback and clarification were provided. Scoring procedures for each of

these measures are highly objective, and the established test reliability for each test is above .90.

Reliability of quantitative measures were determined through a rescoring procedure. Administration of the Paragraph Reading subtest of the GORT-D was audiotape recorded. The audiotape recordings were used to verify the reading miscues produced in oral reading, and the number of seconds required to read each graded section. Fifty percent of all standardized tests given were randomly selected and rescored by a graduate student familiar with the test instruments but unfamiliar with the subjects, and blind to the condition to which each subject is assigned.

Informal Measures

The primary researcher elicited the oral reading of the informal reading test. The same instructions were given to all subjects to assure that equal information was given prior to attempting the task. The primary researcher scored the oral reading sample. The same criteria was applied in scoring all samples, as specified above.

Reliability of informal measures was determined through a rescoring procedure. Administration of the informal measures was audiotape recorded. Fifty percent of the audiotapes of the oral reading samples were randomly selected and rescored by experienced evaluators in reading and language who are familiar with miscue analysis, informal reading assessment, and language sampling. These reliability judges

were unfamiliar with the subjects and blind to the condition to which the subject was assigned.

Experimental Condition

Treatment was provided to experimental subjects in three small groups, each meeting for 45 minutes, four days per week. Subjects were grouped according to intervention time requests made by parents, and initial reading materials were selected to conform as closely as possible with the reading levels obtained during pretesting and adjusted for changes in performance over the course of the eight week treatment period.

Materials

Each of the three small groups read four books during the eight week treatment period. Each book was read and discussed for two weeks (i.e., eight sessions.) The books were selected so that their readability corresponded to the instructional reading level of the group members. The first book was selected based on the instructional reading levels obtained at pretesting on the GORT-D Paragraph Reading subtest. Successive books were selected to correspond to the instructional reading level of the group at the beginning of that two-week period.

All of the books used in the study were selected from The Sunshine Fiction reading series, distributed by The Wright Group. This series consists of eight titles at each of ten levels of difficulty at the preprimer-first grade range, and

eleven titles at each of four levels of difficulty at the first-second grade range. These books were designed to correspond to a designated level of readability. With increasing readability, the vocabulary, mean number of words per sentence, number of words per page, ratio of print to pictures, and abstraction of the concepts presented each increase, while size of the print decreases.

The researcher selected a book for use during a two-week period based on the appropriate readability level, the structure of the story, the language included in the text, the abstractness of the ideas presented, and the preferences of the group members when offered a choice of book titles or topics.

Treatment

Treatment consisted of eight weeks of intervention comprised of 32 small group sessions (3-4 children per group), scheduled four days per week for 45 minutes. Treatment was provided in a group therapy room at the LSU Speech and Hearing Clinic. Each group received treatment provided by the same speech-language pathologist throughout the eight-week period. Treatment consisted of a procedure termed Communicative Reading Strategies (Norris, 1989; Norris & Hoffman, 1993). In this procedure, reading was treated as an interaction ongoing between the text (as represented by the written words), the readers (experimental subjects), and a facilitator (the speech-language pathologist) who assisted the interaction by

directing the readers to the correct interpretation of the text, teaching vocabulary or other aspects of language that were unfamiliar to the readers as they were encountered in context, and guiding interpretations and inferences related to the meaning communicated by the author.

In this procedure, the interaction generally preceded as a three-step process. First, the facilitator established the content and intent of the text's message prior to the reading of the text using a Preparatory Set. The Preparatory Set served a variety of functions, including activating relevant concepts or background knowledge, simplifying large and/or abstract units of meaning, or parsing complex grammatical structures and/or discourse structures to demonstrate how the form of the language functions to establish relationships of meaning between ideas.

Secondly, one or more readers interpreted the texts message by orally reading the text independently or in unison. During this reading, the facilitator monitored the reading for indications that the information either was or was not being meaningfully processed by the child. Indicators such as word miscues, slow rate of word recognition, frequent decoding by visible phoneme by phoneme sounding out, poor phrasing, word-by-word reading, intonation that was inappropriate to the meaning of the message, or poor response to comprehension checks suggested that something about the message was unknown or difficult to process.

Thirdly, the facilitator provided differential feedback to the reader based on whether the child(ren)'s reading suggested that the text was or was not adequately processed for meaning and intent. The strategies that were used to expand, refine, or clarify meaning are enumerated below. Appendix D presents evaluation criteria that can be used for CRS. These criteria gives additional examples of specific use of the strategies. When the text was appropriately read, the facilitator extended the idea to incorporate additional information or to model an inference, helping the children to consider the information beyond its literal interpretation. When the text was inappropriately read, the facilitator taught the unknown language, activated background knowledge possessed by the reader, clarified or challenged a misinterpretation, or modelled a response to the intended message.

The strategies used for these purposes included:

1. Semantic Cues. Semantic Cues are used to facilitate the retrieval of a word or small segment of the text when the child miscues while reading the text. Semantic cues include the provision of defining characteristics, synonyms, explanations.

Example: Child: "It is soup."

Adult: "It is 'delicious' soup. It tastes so good. It tastes wonderful."

2. Expansion. Expansions are used to confirm the child's ideas and to increase the complexity of a portion of text to

include more markers of time, location, state, or attribution. The adult is adding more information or elaborating on the child's sentence structure.

Example: Child: "Later"

Adult: "Yes, he will do it later. He will do it after school, or tonight, or tomorrow."

3. Extension. Extensions are used to clarify or elaborate on information from the text. Extensions include verbal comments related to the text that add clarification to any aspect of language, including elements of semantics, syntax, morphology, discourse structure, vocabulary, or cohesion. This is especially important as the language becomes more abstract and interpretation requires making an inference or activating background knowledge.

Example: Child: "The building is on fire."

Adult: "The building is on fire, so the people need someone to come to their rescue."

4. Questioning. Questions are used to facilitate problem solving, rather than to assess comprehension. Questions are used to foster prediction, interpretation, inference, evaluation, problem solving, perspective taking or for relating the text to background knowledge. They also can be used when miscues are produced in reading, to allow the child to actively participate in revising and repairing these miscues after reexamining the text.

Example: Adult: "What do you think he will use to put out the fire?"

Child: "Water"

5. Cohesive Ties. Reference to Cohesive Ties is used to establish the connection between previously read text and the new information encountered in text. Cohesive Ties include pronouns and diectic terms that are used to refer to old information, to relate ideas across sentences to build story structure, to integrate discourse structure. When the adult points back and forth between the print ideas linking through cohesive ties, the child is helped to process more complex text and move toward conclusions related to the complete text, and to predicting future events.

Example: Text: After a while the people were mad.

Adult: (pointing between two pages of text) "See, here the people were happy, but it didn't take long! Now, see how angry they look."

6. Summarization. Summarization is used to synthesize units of information, ranging from ideas within a sentence to a complete story. Summarization assists the reader to organize a sequence of events, categorize the information presented across the text, and draw conclusions and evaluation. It also provides an opportunity for the adult and the child to restate the most important ideas and relationships, providing needed repetition of these concepts.

Example: Adult: "First it was a small fire, just a spark.

Then it became bigger. It burned some cloth. Next it became so big. It was blazing. The building was on fire!"

7. Metalinguistic Attention. Metalinguistic Attention is used to make explicit reference to important conventions of print, including elements such as punctuation

Example: Adult: "This (when referring to an exclamation mark) tells me Mary is excited."

Example: Adult: "This (when referring to the quotation marks) tells me who is talking and that this is exactly what he said."

Metalinguistic Attention within meaningful text establishes the relevance of conventions to reading and their importance in deriving meaning from the text.

8. Cloze Procedure. Cloze procedure is used to reduce the complexity of a portion of text by the adult providing the initial portion and allowing the child to complete the idea by supplying the relevant words. This procedure is useful when the text is complex and the child demonstrates a need for help in completing ideas.

Example: Adult: "It was just a little beginning of the fire. It was a ..."

Child: "spark"

9. Relational Terms. Relational terms are used to cue meaningful relationships between ideas. The relationships, established by complex ideas related to causality (i.e.

"because"), time (i.e. "then"), or condition (i.e. "if") can be simplified by the facilitator pointing out the two or more portions of text while providing the terms that establish the relationship.

Example: Adult: "Mom was making a deal here. If you clean your room..."

Child: "I will take you to get ice cream."

Adult: "'Because' Jim didn't look, a car hit him. See here where he didn't look. Because of not looking..."

Child: "A car hit Jim."

10. Binary Choices. Binary choices are given when a child apparently cannot independently retrieve words or concepts.

Example: Adult: "Was it delicious soup or horrible soup?" (while pointing to the word)

Child: "delicious soup"

11. Modelling. Modelling is used throughout the intervention in order for the child to see and hear fluent use of a word or portion of text used in context.

Repeated Readings

Each book was divided into elements of story grammar, such as the setting and the component episodes. The setting was read using the Communicative Reading Strategy procedures on the first intervention session. On each successive treatment day, the previously read pages were summarized and a new episode or other story grammar element was introduced

and communicatively read. In this manner, difficult language or concepts were repeatedly read, examined, and discussed to provide the readers with multiple opportunities to acquire or refine understanding of the language and achieve rapid recognition of the visual representation of the words. Facilitative strategies were provided during the review of old information only when the reader demonstrated poor recall or misinterpretation of the text.

Repeated readings also was adhered to during the initial reading of a new episode. When a child initially read a sentence with multiple miscues or indications of poor processing, the language was taught using the strategies enumerated above. The child was then asked to retell the idea by rereading the passage, providing the child an opportunity to produce the complex language as an integrated message and the facilitator with an opportunity to listen for further misinterpretations or processing difficulties. Difficult passages were also reread by successive group members, providing each of them an opportunity to process the language in both the listener and the speaker roles. Finally, rereading was used when a series of sentences were communicatively read, and the child was asked to retell part of the story (i.e., a large unit such as a paragraph or a page) by rereading it, providing the opportunity to hear and produce connected discourse.

Posttesting

Following the eight week intervention period (i.e., during the period from August 10 through 19) the battery of quantitative and informal assessments were readministered as a posttest measurement in accordance with the procedures described above. In addition, the complete battery was administered to the experimental and control groups during December, 1993, and May, 1994, to determine the long term effects of the treatment.

Control Condition

Subjects participating in the control condition were administered the battery of quantitative and informal assessments during the May 17 through 28 pretest period, once again during the August 6 through 19 posttest, and again in December, 1993, and May, 1994. During the interim eight week period of treatment, subjects engaged in summer activities consistent with their family activities. They did not participate in any instructional or remedial programs for reading, nor did they receive tutoring or assistance in reading from parents or other professionals or caregivers. Children in this group were read to or independently read books, stories, magazines, or other literature, consistent with family practices. The subjects and their parents were questioned at the time of posttesting, indicating the amount and type of reading or literacy experiences engaged in over the course of the eight-week intervention period.

Educational differences were experinced by subjects during the school year, both within and between groups. The children attended nine different schools, five private and four public. They also were provided reading instruction in programs representing different educational philosophies and practices. Four treatment and six control subjects received reading instruction in the regular classroom . Three in each group were retained in first grade. One in each group was placed in a dyslexia program, and one in each group received outside tutoring. Three control and one CRS subject received help in a resource room, while two treatment and one control subject participated in Chapter I reading.

Data Analysis

The differences between gain scores for the treatment and control groups were compared at three different time intervals (i.e., pretest to posttest I, pretest to posttest II, and pretest to posttest III). Group means of the gain scores at each interval were analyzed using one-tailed t-tests. If significant group differences were obtained, individual subtests of the composite were examined using one-tailed t-tests to determine which subtests reflected reliable differences. The dependent variables from the GORT-D were the gain scores reflecting a change (i.e., increase or decrease) on two composite scores: (1) Contextualized Reading, the gain score between pretest and posttest for word recognition, reading rate, and comprehension (i.e., the

Paragraph Reading subtest), and (2) Word Analysis, the gain score between pretest and posttest for the six supplemental subtests and the number of words identified on the Word Identification subtest (i.e., the decoding, word attack, word identification /semantic matching, morphemic analysis, contextual analysis, and word ordering subtests, and the number of words identified on the identification /semantic matching subtest).

The dependent variables for the informal reading assessment were the gain scores reflecting a change (i.e., increase or decrease) in the number of miscues and the number of seconds required to read the kindergarten and first grade passages from Bear and Fly.

The dependent variables from the TOLD-P were the gain scores reflecting a change (i.e., increase or decrease) on two composite scores and two individual subtests: 1) Semantics, the gain score between pretest and posttest for picture vocabulary and oral vocabulary, 2) Syntax, the gain score between pretest and posttest for grammatic understanding, sentence imitation and grammatic completion, and 3) sound discrimination and sound articulation subtests.

RESULTS

The purpose of this study was to determine the efficacy of Communicative Reading Strategies as an instructional program for first grade children at risk for reading and language. Twenty-one first grade children participated in the study. They were in the lower twenty percent of their classes in reading and scored below the 20th percentile on at least one component of the Paragraph Subtest of the Grey Oral Reading Test-Diagnostic (Bryant & Wiederholt, 1991). The children were randomly assigned to treatment and control groups. Treatment children received Communicative Reading Strategy (CRS) instruction for eight weeks (32 days). The control group received no intervention and were enrolled in no other remedial program during the eight week time period. Pretest and posttest measures of reading and oral language proficiency were administered to both groups at four time intervals. The pretest was administered in May prior to beginning treatment in June. Posttest I was conducted in August following treatment. Posttest II was conducted the following December at the middle of the school year. Posttest III was conducted in May, one year after the initial pretest and at the end of the academic school year.

The differences between gain scores for the treatment and control groups were compared at three different time intervals (i.e., pretest to posttest I, pretest to posttest

II, and pretest to posttest III). Group means of the gain scores at each interval were analyzed using one-tailed t-tests. The results of the analyses were designed to answer two questions. First, the immediate and long-term results of the CRS treatment on measures of reading were analyzed to determine if CRS is effective in improving the reading abilities of poor readers. The measures included eight subtests of the Grey Oral Reading Test-Diagnostic (i.e., the Paragraph Reading, Decoding, Word Attack, Word Identification, Morphemic Analysis, Contextual Analysis, and Word Ordering), the number of words identified on the Word Identification subtest of the GORT-D, the number of miscues produced on the kindergarten and first grade level passages on Bear and the Fly reading passages, and the time required to read the passages.

The second question examined the immediate and long-term effects of the CRS treatment on measures of language. The measures comprised seven subtests of the Test of Language Development-Primary (Newcomer & Hammill, 1988) (i.e., Picture Vocabulary, Oral Vocabulary, Grammatic Understanding, Sentence Imitation, Grammatic Completion, Word Discrimination, and Word Articulation).

Effects of CRS on Reading

Question one examined the effects of Communicative Reading Strategies on reading ability using a standardized test and an informal reading assessment. Dependent variables

derived from the GORT-D included two composite scores. The first, or Contextualized Reading score, was the gain score between pretest and posttest for word recognition, reading rate, and comprehension (i.e., the Paragraph Reading subtest). The second, or Word Analysis score, was the total gain score between pretest and posttest for the six supplemental subtests and the number of words identified on the Word Identification subtest combined. If significant group differences were obtained, individual subtests of the composite were examined using one-tailed t-tests to determine which subtests reflected reliable differences. The subtests included Decoding, Word Attack, Word Identification (Semantic Matching), Words Identified, Morphemic Analysis, Contextual Reading, and Word Ordering.

Dependent variables derived from the informal reading assessment were the gain scores reflecting a change (i.e., increase or decrease) in the number of miscues and the number of seconds required to read the kindergarten and first grade passages from Bear and Fly. Means and standard deviations for the gain scores on each of the measures for the treatment and control groups at each time interval were compared using one-tailed t-tests.

Results of GORT-D Measures

The analysis of standardized reading test measures predicted a significantly better performance for the

treatment group on the gain scores for both Contextualized Reading and Word Analysis. Contextualized Reading included word recognition, reading rate, and comprehension combined (i.e., the Reading Passages subtest). Word Analysis comprised a composite of the supplemental subtests of the GORT-D, and the number of words identified on the Word Identification (Semantic) subtest. For each measure, the mean gain score between pretest and each posttest (end of treatment, December, and May) was compared for the treatment and control groups.

Comparison of Pretest and Posttest I

The means and standard deviations for the gain scores attained by the treatment and control groups between pretest and posttest I (May to August) are presented on Table 5. These results represent the changes made immediately on the GORT-D following the eight week intervention period. The mean gain scores reflected greater increases for the treatment group than for the control group for both Contextualized Reading and the Word Analysis composite (i.e., the combined word analysis subtests). In addition, all of the subtests showed an increased gain score for the treatment group, while four of the eight subtests showed a decrease in correct responses for the control group.

Table 5

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on GORT-D Subtests at Pretest (May) and Posttest I (August).

	Treatment group n = 9		Control group n = 12	
Subtest	M	SD	M	SD
(Paragraph reading)				
Contextualized reading				
Composite	7.89*	2.57	3.83	4.32
Decoding	5.44*	6.86	-1.00	6.99
Word attack	2.67	5.00	0.83	3.19
Word identification	0.22*	2.05	-1.75	1.66
(Semantic matching)				
Words identified	0.89*	7.91	-5.75	4.27
Morphemic analysis	3.11*	2.32	-1.50	3.68
Contextual analysis	0.78	2.64	0.42	1.51
Word ordering	2.67	2.24	1.25	2.83
Word Analysis				
Composite	15.78*	20.31	-7.50	11.65

* significant = $p < .025$

The significance of the group differences was examined by comparing the groups for performance on the composite measures Paragraph Reading and Word Analysis. Two, one-tailed t-tests revealed significantly better performance for the treatment condition on both Paragraph Reading ($p < .006$) and Word Analysis ($p < .001$). To maintain the overall probability of a Type I error at less than a .05 level, each of these was evaluated at the .025 level. These results indicate that the CRS treatment did result in a significantly greater number of correct responses on standardized test measures than the control condition.

To determine which of the subtests contributed to the group differences, t-tests were calculated for each of the subtests of the Word Analysis composite. Significantly greater gain scores for the treatment group were obtained for Decoding, Word Identification, Words Identified, ($p < .05$), and for Morphemic Analysis, ($p < .01$).

Comparison of Pretest and Posttest II

The means and standard deviations for the gain scores attained by the treatment and control groups between prettest and posttest II (May to December) are presented on Table 6. These results represent the changes made following four months post-intervention, or during the fall school term. The mean gain scores reflected greater increases for the treatment group than for the control group for both

Table 6

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on GORT-D Subtests between Pretest (May) and Posttest II (December).

	Treatment Group n = 9		Control Group n = 12	
Subtest	M	SD	M	SD
(Paragraph reading)				
Contextualized Reading				
Composite	14.11	9.58	12.58	11.11
Decoding	4.67	11.35	6.08	8.72
Word attack	2.44	6.58	1.58	5.05
Word identification	2.33	2.24	2.08	2.28
Words identified	11.11	11.84	9.42	9.25
Morphemic analysis	9.56	6.35	3.33	5.12
Contextual analysis	3.33	2.55	4.16	5.08
Word ordering	2.55	2.83	4.08	3.06
Word Analysis				
Composite	36.00	34.01	30.75	23.85

* significant = $p < .025$

Contextualized Reading and the Word Analysis composite. Subtest means revealed that both groups made gains on all of the subtests, but greater gains were made by the treatment group for all but the Decoding, Contextual Analysis, and Word Ordering subtests. The subtests representing gains for the treatment group, including Word Attack, Word Identification, Words Identified, and Morphemic Analysis measures, include three subtests that assess contextualized reading and word recognition.

The significance of the group differences was examined by comparing the groups for performance on the composite measures Paragraph Reading and Word Analysis. Two, one-tailed t-tests revealed no significant differences between groups at the .025 level. These results indicated that the CRS treatment did not result in a significantly greater number of correct responses on these standardized test measures than the control condition four months post-intervention.

Comparison of Pretest and Posttest III

The means and standard deviations for the gain scores attained by the treatment and control groups between pretest and posttest III (May to May) are presented on Table 7. These results represent the changes made during the entire school term. The mean gain scores reflected greater increases for the treatment group than for the control group

Table 7

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on GORT-D Subtests between Pretest (May) and Posttest III (May).

	Treatment Group n = 9		Control Group n = 12	
Subtest	M	SD	M	SD
(Paragraph reading)				
Contextualized Reading				
Composite	28.44	16.91	21.58	12.99
Decoding	10.00	11.73	9.67	8.09
Word attack	4.67	6.60	5.33	4.81
Word identification	4.44	4.19	2.08	2.84
Words identified	20.89	19.45	13.25	12.59
Morphemic analysis	12.11	6.05	7.75	6.06
Contextual analysis	5.44	4.22	4.92	3.75
Word ordering	5.78	4.21	5.42	3.55
Word Analysis				
Composite	63.33	45.32	48.41	30.16

* significant = $p < .025$

for both Contextualized Reading and the Word Analysis composite. Subtest means revealed that the treatment group made greater gains on all but the Word Attack subtest. The treatment group continued to demonstrate better performance in actual reading (i.e., Paragraph Reading) and word recognition (i.e., Word Identification, Words Identified).

The significance of the group differences was examined by comparing the groups for performance on the composite measures Paragraph Reading and Word Analysis. Two, one-tailed t-tests revealed no significant differences between groups at the .025 level. These results indicated that the CRS treatment did not result in a significantly greater number of correct responses on these standardized test measures than the control condition one year post-intervention.

Results of Informal Reading Measures

The analysis of informal reading measures predicted greater difference scores on the number of miscues and amount of time required for reading Bear and Fly kindergarten and first grade passages. A positive value indicated that the difference scores reflected a greater number of errors or a greater number of seconds for the passage between pretest and posttest. A negative value indicated difference scores reflecting fewer errors or fewer seconds for the passage reading. Means and standard deviations for the difference scores on each of the respective reading passages were

compared across time intervals for the treatment and control groups.

Comparison of Pretest and Posttest I

The means and standard deviations for the difference scores attained by the treatment and control groups between pretest and posttest I (May to August) are presented on Table 8. These results represent the changes made on Bear and Fly passages immediately following the eight week intervention period. The mean difference scores were greater for the treatment group than for the control group for both miscues (i.e., a greater decrease in errors) and time (i.e., a greater decrease in reading time) on the kindergarten and the first grade passages.

The significance of the group differences was examined by comparing performance on the miscue and time measures for both the kindergarten and the first grade passages (see Table 4.4). To maintain the overall probability of a Type I error at less than a .05 level, each of these was evaluated at the .025 level. One-tailed t-tests revealed significantly better performance for miscues by the treatment condition on both the kindergarten and the first grade reading passages ($p < .001$). One-tailed t-tests did not reveal significant group differences for reading time for either grade level passage. These results indicate that the CRS treatment did result in a significant decrease in the number of miscues, but not the

Table 8

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on Bear and Fly between Pretest and Posttest I.

	Treatment group n = 9		Control group n = 12	
Subtest	M	SD	M	SD
Miscues				
Kindergarten passage	-10.56*	5.52	-1.00	4.82
First Grade passage	-18.67*	12.50	-2.36	6.71
Time				
Kindergarten passage	-20.55	49.59	-1.36	63.58
First grade passage	24.78	127.46	47.55	165.23

* significant = $p < .025$

time required to read each passage on an informal reading measure.

Comparison of Pretest and Posttest II

The means and standard deviations for the difference scores attained by the treatment and control groups between prettest and posttest II (May to December) are presented on Table 9. These results represent the changes made following four months post-intervention, or during the fall school term. The mean difference scores in miscues (i.e., a greater decrease in errors) were greater for the treatment group at

the kindergarten level. The mean difference scores in time (i.e., a greater decrease in reading time) were greater for the treatment group for both the kindergarten and first grade passages.

The significance of the group differences was examined by comparing performance on the miscue and time measures for both the kindergarten and the first grade passages. To maintain the overall probability of a Type I error at less than a .05 level, each of these was evaluated at the .025 level. One tailed t-tests revealed significantly better performance for the kindergarten passage by the treatment group for both miscues ($p < .025$) and time ($p < .024$). These results indicate that the CRS treatment resulted in a significantly better performance after a four month delay for the lower level reading passage.

Comparison of Pretest and Posttest III

The means and standard deviations for the difference scores attained by the treatment and control groups between pretest and posttest III (May to May) are presented on Table 10. These results represent the changes made during the entire school term. The mean difference scores in miscues (i.e., a greater decrease in errors) were greater for the treatment group at the kindergarten level. The mean difference scores in time (i.e., a greater decrease in

Table 9

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on Bear and Fly between Pretest (May) and Posttest II (December).

	Treatment Group n = 9		Control Group n = 12	
Subtest	M	SD	M	SD
Miscues				
Kindergarten Passage	-13.67*	6.82	-7.82	6.06
First Grade Passage	-28.11	16.03	-33.00	18.33
Time				
Kindergarten passage	-90.11*	17.91	-56.60	43.93
First grade passage	-131.56	79.01	-80.80	106.17

* significant = $p < .025$

reading time) were greater for the treatment group for both the kindergarten and first grade passages of Bear and Fly.

The significance of the group differences was examined by comparing performance on the miscue and time measures for both the kindergarten and the first grade passages. To maintain the overall probability of a Type I error at less than a .05 level, each of these was evaluated at the .025 level. One-tailed t-tests did not reveal significant group differences for miscues or reading time for either grade

Table 10

Means and Standard Deviations for Time Gain Scores Attained by Treatment and Control Groups on Bear and Fly Passages between Pretest (May) and Posttest III (May).

	Treatment Group n = 9		Control Group n = 12	
Subtest	M	SD	M	SD
Miscues				
Kindergarten passage	-15.56	8.17	-10.55	7.16
First grade passage	-40.11	19.95	-40.27	17.93
Time				
Kindergarten passage	-118.67	23.31	-90.00	51.63
First grade passage	-166.44	127.89	-136.20	85.81

* significant = $p < .025$

level passage. These results indicate that the CRS treatment did not result in significantly better reading one year post-intervention on informal reading measures.

Summary of Reading Measures

Table 11 presents a summary of the results obtained from both the standardized test measures and the informal reading passages measures of reading. Nine significant differences were obtained, all of which favored the CRS treatment condition. Eight of these differences occurred immediately following the eight week treatment period. They reflected

better performance on actual reading and comprehension, as well as response to tasks requiring word analysis abilities. In addition, gain scores on all standardized and informal measures were higher for the treatment group. By December, following the fall term in school, fewer significant differences were obtained. However, both of these differences (i.e., Bear and Fly miscues and time on kindergarten passage) were for actual reading. Additionally, the gain scores for the treatment group remained higher on all subtests of the GORT-D except
decoding, contextual analysis, and word ordering, and on Bear and Fly miscues on the first grade passage. No significant differences were present at the final posttest in May, although the gain scores for the treatment group remained higher for all subtests except word attack on the GORT-D. All gain scores were higher for the treatment group for all informal measures of reading assessment at the final posttest.

Effects of CRS on Language

Question two examined the effects of Communicative Reading Strategies on language ability using a standardized test. Dependent variables derived from the TOLD-P included two composite scores. The first, or Semantic score, was the gain score between pretest and posttest for the two

Table 11

Summary of Reading Measures Reflecting Significantly Better Performance for Treatment Condition at Pretest (May) and Posttests I (August), II (December), and III (May).

Subtest	Posttest I	Posttest II	Posttest III
GORT-D Contextualized reading			
Paragraph reading	*		
GORT-D Word analysis	*		
Decoding	*		
Word Attack			
Word Identification	*		
Words Identified	*		
Morphemic Analysis	*		
Contextual Analysis			
Word Ordering			
Bear and Fly Miscues			
Kindergarten passage	*	*	
First grade passage	*		
Bear and Fly Time			
Kindergarten passage		*	
First grade passage			

* significant = $p < .025$

supplemental subtests Picture Vocabulary and Oral Vocabulary combined. The second, or Syntax score, was the total gain score between pretest and posttest for the three supplemental subtests Grammatic Understanding, Sentence Imitation, and Grammatic Completion combined. If significant group differences were obtained, individual subtests of the composite were examined using one-tailed t-tests to determine which subtests reflected reliable differences. The subtests included Picture Vocabulary, Oral Vocabulary, Grammatic Understanding, Sentence Imitation, Grammatic Completion, Word Discrimination, and Word Articulation.

Results of TOLD-P Measures

The analysis of standardized language test measures predicted a significantly better performance for the treatment group on the gain scores for both Semantics and Syntax. Semantics included a composite of two supplemental subtests of the TOLD-P, Picture Vocabulary and Oral Vocabulary. Syntax comprised a composite of three supplemental subtests of the TOLD-P, Grammatic Understanding, Sentence Imitation, and Grammatic Completion subtest. For each measure, the mean gain score between pretest and each posttest (end of treatment, December, and May) was compared for the treatment and control groups.

Comparison of Pretest and Posttest I

The means and standard deviations for the gain scores attained by the treatment and control groups between pretest

and posttest I (May to August) are presented on Table 12. These results represent the changes made immediately on the TOLD-P following the eight week intervention period. The mean gain scores reflected greater increases for the treatment group than for the control group for both Semantics (i.e., the combined Picture Vocabulary and Oral Vocabulary subtests) and the Syntax composite (i.e., the combined Grammatic Understanding, Sentence Imitation, and Grammatic Completion subtests). In addition, all of the subtests showed a greater gain score for the treatment group than for the control group except Sentence Imitation and Word Articulation subtests.

The significance of the group differences was examined by comparing the groups for performance on the composite measures Semantics and Syntax. Two, one-tailed t-tests revealed no significant differences between groups at the .025 level. These results indicated that the CRS treatment did not result in a significantly greater number of correct responses on standardized test measures than the control condition immediately post-intervention.

Comparison of Pretest and Posttest II

The means and standard deviations for the gain scores attained by the treatment and control groups between prettest and posttest II (May to December) are presented on Table 13.

Table 12

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on TOLD-P Subtests at Pretest and Posttest I.

Subtest	Treatment Group n = 9		Control Group n = 12	
	M	SD	M	SD
Picture Vocabulary	4.55	5.08	.67	3.58
Oral Vocabulary	2.78	6.24	1.33	6.12
Semantics Composite	7.33	7.12	2.00	7.6
Grammatic Understanding	2.33	2.87	1.99	3.30
Sentence Imitation	-0.67	5.22	1.83	2.76
Grammatic Completion	5.89	3.59	2.66	3.92
Syntax Composite	7.56	7.6	6.5	3.71
Word Discrimination	1.89	1.76	1.33	2.15
Word Articulation	-0.90	3.52	-0.25	3.75

* significant = $p < .025$

These results represent the changes made on the TOLD-P following four months post-intervention, or during the fall school term. The mean gain scores reflected greater

increases for the control group than for the treatment for both Semantics and Syntax composites. Subtest means revealed that both groups made gains on all of the subtests except for Oral Vocabulary and Word Articulation, but greater gains were made by the treatment group for Picture Vocabulary and Grammatic Completion. The control group made greater gains on Oral Vocabulary, Grammatic Understanding, Sentence Imitation, Word Discrimination, and Word Articulation.

The significance of the group differences was examined by comparing the groups for performance on the composite measures Semantics and Syntax. Two, one-tailed t-tests revealed no significant differences between the groups at the .025 level. These results indicated that the CRS treatment did not result in a significantly greater number of correct responses on these standardized test measures than the control condition four months post-intervention.

Comparison of Pretest and Posttest III

The means and standard deviations for the gain scores attained by the treatment and control groups between prettest and posttest III (May to May) are presented on Table 14. These results represent the changes made following 12 months post-intervention, or during the entire school term. The mean gain scores reflected greater increases for the treatment group than for the control group for the Semantics composite. The control group scores reflected greater

Table 13

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on TOLD-D Subtests between Pretest (May) and Posttest II (December).

	Treatment Group n = 9		Control Group n = 12	
Subtest	M	SD	M	SD
Picture Vocabulary	6.11	3.37	2.17	3.83
Oral Vocabulary	-3.67	3.24	0.92	3.94
Semantics Composite	2.44	4.33	3.08	3.03
Grammatic Understanding	2.11	2.57	2.75	2.30
Sentence Imitation	1.33	5.34	6.58	4.52
Grammatic Completion	4.55	5.08	4.17	3.97
Syntax Composite	8.0	10.7	13.5	7.08
Word Discrimination	0.56	4.88	1.92	2.47
Word Articulation	-0.89	3.22	0.42	4.98

* significant = $p < .05$

increases for the Syntax composite than the treatment group. Subtest means revealed that both groups made gains for all subtests. Slightly greater gains were made by the control

Table 14

Means and Standard Deviations for Gain Scores Attained by Treatment and Control Groups on TOLD-D Subtests between Pretest (May) and Posttest III (May).

	Treatment Group n = 9		Control Group n = 12	
Subtest	M	SD	M	SD
Picture Vocabulary	7.11*	5.21	3.08	4.40
Oral Vocabulary	5.00	5.32	2.75	7.97
Semantics Composite	12.11*	5.8	5.8	7.1
Grammatic Understanding	2.44	2.56	4.17	2.79
Sentence Imitation	2.11	6.55	6.00	4.70
Grammatic Completion	8.00	5.27	6.00	3.54
Syntax Composite	12.56	10.3	16.17	6.8
Word Discrimination	3.00	1.12	2.67	2.50
Word Articulation	1.11	0.93	1.58	3.78

* significant = $p < .05$

group on Grammatic Understanding, Sentence Imitation, and Word Articulation. The treatment group made greater gains

than the control group on the Picture Vocabulary, Oral Vocabulary, Word Discrimination and Grammatic Completion subtests.

The significance of the group differences was examined by comparing the groups for performance on the composite measures Semantics and Syntax. Two, one-tailed t-tests revealed significantly better performance for the treatment condition on Semantics ($p < .025$). To maintain the overall probability of a Type I error at less than a .05 level, each of these was evaluated at the .025 level. These results indicated that the CRS treatment did result in a significantly greater number of correct responses on these standardized test measures than the control condition.

To determine which of the subtests contributed to the group differences, t-tests were calculated for each of the subtests of the Semantics composite. The receptive Picture Vocabulary subtest gain score was significantly better for the CRS group ($p < .04$), while the expressive Oral Vocabulary subtest did not result in reliable differences between groups.

Summary of Language Measures

Seven subtests of the TOLD-P were administered immediately post-intervention, following the fall term, and at the end of the school year. Only one significant difference was obtained. This result was obtained for Picture Vocabulary twelve months post-intervention. At all

time intervals, the receptive and expressive vocabulary subtests showed greater gain scores for the CRS group, although only one of these differences reached significance. Nonsignificant advantages were found for the CRS condition for the Grammatic Understanding (Posttest I and III) and Grammatic Completion (all intervals) subtests, while the control group performed better (but not significantly so) on the Sentence Imitation task at all intervals. At the phonological levels, Word Discrimination gains were greater at Posttest I and III for the CRS group, while neither group improved notably on Word Articulation.

The results of both the reading and oral language analyses showed that all significant differences were accrued to the CRS condition. The greatest gains and the largest number of significant differences were obtained immediately post-intervention. Both groups made gains throughout the school year, but the mean gain scores remained higher for the CRS condition on all measures of reading and most measures of oral language at the four month and one year intervals, although not significantly so for most subtests. The interpretations and implications for these findings will be discussed relative to theory and practice.

DISCUSSION

When children experience failure in learning to read, the prescription for intervention is generally comprised of a focus on specific skills or behaviors in need of remediation. Code-emphasis approaches focus attention on decoding skills, such as letter-sound associations or phonic rules (Chall, 1983). Phonemic awareness approaches focus attention on sound blending, syllabification, or identifying sounds in varying word positions (Blachman, 1994; Wagner & Torgesen, 1987). Sight word approaches focus on recognizing the visual configuration of whole words, and building a large vocabulary of automatically retrieved words through practice (Choate & Rakes, 1989). Even programs viewed as more meaning based, such as Reading Recovery (Clay, 1993), focus specific attention on skills such as dividing words into syllables, adding morphemes to root words, or creating words from magnetic letters.

While such specific focus on skills or behaviors may be effective in generating changes in reading behavior, the question remains as to whether it is necessary. Whole language advocates propose that children construct and learn to control the many levels of language involved in reading while reading and writing complex, authentic written language. By reading and writing meaningful text, patterns and regularities of orthography are developed. Similarly,

the relationships between orthography and phonology (i.e., phonics) are established. Information from the semantic and syntactic levels of language provide critical cues to assist the learner as control over more novel aspects of print is acquired, and at the same time the literate language style of print refines semantics and syntax. All of these interact to enable readers to engage in a meaning making process as reading and writing are acquired.

The acquisition of specific skills or behaviors would occur as a natural and necessary part of the ongoing cycle of refinement resulting from reading experiences. This refinement is bidirectional, with new patterns emerging from earlier acquisitions, and earlier acquisitions becoming more automatic and generalizable as they integrate with new patterns. Specific skills or behaviors at a particular level of language would appear as part of this cycle, occurring as a result of learning to read (and write). If learning occurs in such cycles of refinement, then evidence of the emergence of these skills should be apparent as the child gains control over authentic reading without a specific focus during intervention on these levels.

This type of generalized refinement would be predicted by a connectionist model, such as the one proposed by Seidenberg and McClelland (1989). The simultaneous activation of interconnections within and between all levels on the model would result in patterns and regularities

forming through the redistributions of connection weights throughout the network. The architecture of the connectionist model is such that a change in the patterns and weights of connectivity at one level generates changes between all other levels and processors in direct and indirect contact. This results in a continuous cycle of pattern formation and revision throughout the network. The network is designed so that patterns continuously change to be representative of the input received from the environment. Theoretically, the more comprehensive the input (i.e., input that contains patterns of language at all levels from orthography through syntax and meaning), the more data available to the system to establish conventional patterns of written language at all levels. This would result in efficiency of learning, since pattern formation would refine across levels simultaneously, and input from higher and lower levels would contribute reciprocally to pattern formations at other levels.

Communicative Reading Strategies (CRS) provides a means for poor readers to experience fluent reading with good comprehension at a readability level higher than their independent abilities could support. The social mediation provided by the scaffolding enables the many levels of language processing required for fluent reading to function synergistically. Input provided by the scaffolding enables poor readers to experience successful reading of authentic

written language, even for essentially nonreaders, and thus to maximize opportunities to learn to control the unfamiliar orthographic and phonic patterns while making sense of print, as described by Goodman (1986, 1993). If these experiences with fluent reading and comprehension are sufficient for patterns and regularities to form throughout the system, as whole language and the connectionist model would predict, then changes in levels not directly addressed in the CRS intervention should be apparent as reading improves.

To examine whether the experiences with fluent reading and comprehension generate changes throughout the system, as predicted, it first must be demonstrated that CRS intervention does improve reading performance. Some transfer of control over fluency and comprehension must be demonstrated, such that the child reads and comprehends better even without the scaffolding, to assure that CRS has an effect on reading performance at the levels practiced (i.e., authentic, contextualized reading). Once it can be demonstrated that CRS does affect reading ability, the question of whether changes in levels of written language processing that were never directly addressed in the CRS treatment can be evaluated.

The relationship between oral and written language, as examined through improvements in oral language performance, is also an important issue. CRS uses oral language to facilitate reading, simultaneously creating an enriched oral

and written language experience for the child. In addition, CRS makes use of print to parse complex sentences into constituent phrases, and to clarify for the child how language works to communicate relationships of meaning within and across sentences. The question of whether oral language abilities are improved as a result of CRS intervention is a third issue evaluated.

Finally, if CRS treatment is effective in improving written and/or oral language abilities, it would be predicted that the changes would be maintained across time. Patterns of language that become more conventional and organized during treatment should propagate patterns in the future that follow along these paths of better organization. This is recognized in reading as the Matthew effect (Stanovich, 1988), where those with better reading abilities in the early grades are better readers who demonstrate higher level abilities in reading skills in the later grades (i.e., the rich get richer, while the poor get poorer). Each of these issues will be discussed relative to the results of this study.

Effects of CRS on Reading Performance

Two measures of reading fluency and comprehension were used to evaluate whether CRS intervention improved reading ability. Results revealed that significant gains were obtained on both the standardized test and on the informal reading assessment. On the standardized measure, it was

predicted that the treatment group would have a significantly better performance on the gain scores for Contextualized Reading. Contextualized Reading comprised a composite of word recognition, reading rate, and comprehension combined (i.e., the Reading Passages subtest of the GORT-D). This task required the reading of short passages, followed by responses to comprehension questions. The passages consisted of stories composed of short sentences, unsupported by pictures or other cues to aid word recognition. Under these conditions, the improvements in reading were significant, compared to the control group. Furthermore, the effects held for all of the subjects receiving CRS treatment. All participants demonstrated a gain score following CRS intervention, while three of the controls stayed the same or performed worse, and two gained only one point. These results indicate that CRS is effective in improving reading fluency and comprehension, and that these improvements cannot be attributed to time or maturation.

These findings were further substantiated by performance on the informal measure. This task differed from the GORT-D passages in that the written text was supported by information presented in pictures, and one continuous story of progressively increasing difficulty was presented across the episodes. Under these conditions, the improvements in reading were significant for both those episodes written at a kindergarten and at a first grade level. Once again, the

effects held for all subjects receiving the CRS condition, and were the most pronounced for the worst readers. For example, children who produced fewer than fifteen miscues on the kindergarten passage at pretest only decreased their miscues at that grade level by five or fewer errors, while the poorest readers produced up to twenty fewer miscues. Similar results were obtained for the first grade passages. In contrast, both the five control subjects producing fewer than fifteen miscues and the poorest readers in the control group improved by two or fewer errors. This is reflected in the very large group mean differences and the highly significant results.

The group means for changes in reading rate also were dramatically different between groups at both the kindergarten (-20.55 vs -1.36 seconds) and first grade (24.78 vs 47.55 seconds) levels, although large standard deviations resulted in nonsignificance. All but one of the CRS subjects decreased reading rate for the kindergarten passage, while six of the controls increased the time required to read these episodes. The decreased reading rate at this level was accompanied by a decrease in miscues for the CRS subjects, indicating that part of the improved rate was attributable to faster and more accurate word recognition.

The profiles were less clear for the first grade passages. All of the control subjects and six of the CRS subjects increased the amount of time required to read the

text. All of the CRS subjects showing a slowed rate exhibited a concomitantly large (12 to 27 errors) decrease in miscues, suggesting that their rate slowed as they worked to successfully identify difficult words. In contrast, seven of the control subjects who showed a decreased rate either increased the number of miscues or showed a minimal decrease of five or fewer errors, suggesting their slowed rate reflected increasing difficulty with harder words at the end of the summer.

The results of both the standardized test and informal reading passage measures of authentic reading verify that CRS is an effective intervention for poor readers. Children simultaneously improved on word recognition, reading rate, and comprehension for both measures. Those children with the poorest profiles prior to intervention made the greatest progress, and relationships between word recognition and reading rate changed in a predictable manner for easy versus difficult passages. The profiles on the CRS subjects differed from controls in nearly every dimension.

Effects of CRS on Multiple Levels of Processing

The finding that the CRS treatment was effective in improving reading fluency and comprehension indicated that at least some level(s) of language processing changed as a result of intervention. Because scaffolding is provided at the level of meaning expressed through discourse, sentences, and words, changes would be expected at the higher levels of

processing. However, if models such as whole language or connectionism are valid, then changes in reading abilities not directly addressed within the intervention also should show changes. This prediction was supported by performance of the CRS subjects on the Word Analysis composite and component subtests.

Subjects in the CRS intervention condition improved in Word Analysis more than the control condition at a statistically reliable level. Of the subtests yielding significant differences, the Words Identified subtest measured a language ability closest to a skill practiced in intervention (i.e., automatic word identification). Positive gains were demonstrated by five of the CRS subjects for this task, but only one control subject. Less predictably, all but one of the CRS subjects improved decoding skills, as measured by this subtest through blending a sequence of sounds to derive a nonsense word. In contrast, half of the control subjects showed a decrease in performance on this task, and these group differences were significant.

Furthermore, significant differences also were obtained for the Morphemic Analysis subtest that required subjects to manipulate parts of words. The three task requirements were inflecting verbs with appropriate tense markers, deriving the root words on contractions such as "isn't," and completing compound words. Once again, all but one of the CRS subjects improved in this measure of word constituent analysis, while

only one control subject increased by a single point. Statistical differences also were obtained for the Word Attack subtest that required subjects to identify little words within a larger word (i.e., potato = to, pot, at), with only one of the CRS subjects showing a decreased performance on this task as opposed to nearly half of the controls.

Tasks requiring manipulation of words also were better for the CRS condition. A significant difference was found for the Word Identification subtest that required subjects to read a set of words and then identify those that were paradigmatically related (i.e., girl - leap - boy). Half of the CRS subjects improved in this task, while only one of the control subjects improved by a single point. Improvements in the ability to manipulate randomly presented words to form grammatical sentences (Word Ordering subtest) improved for all but one CRS subject, but only four controls, although this difference was not significant.

Thus, at a wide range of word analysis skills, children in the CRS condition showed improvements that could not be attributed to time or maturation. Changes were obtained on tasks such as decoding, word attack, and word identification that were never directly addressed in intervention. The subtests measured skills typically targeted and directly taught in many programs designed to improve the skills of poor readers. While the number of subjects in this study is small and broad generalizations cannot be made, the results

do suggest that these levels represent patterns of language within the whole that change to become more conventional and easily recognized by children as their reading level improves. This suggests that a direct focus on these levels may not be necessary to effect a change, and that working on these subskill levels may not be an efficacious use of time. Rather, working at higher levels of authentic reading may be sufficient to simultaneously foster patterns of better organization at both the contextualized reading and word analysis levels for poor readers. This preliminary finding will require further exploration and validation in future studies.

Effects of CRS on Oral Language

One standardized measure of language was used to evaluate whether CRS intervention improved language ability. Results revealed that mean gain scores for five subtests of the TOLD-P were greater for the CRS subjects. The semantic composite, comprised of receptive and expressive vocabulary subtests, showed greater differences in mean gain scores than did the syntactic composite. Only sentence imitation showed greater gains for the control subjects. These effects held for individual subjects receiving CRS treatment. For each subtest except sentence imitation, a greater number of CRS subjects improved their scores. For Picture Vocabulary, Grammatical Understanding, Grammatic Completion, and Word Discrimination, nearly all subjects from the CRS group

exhibited gains, while only approximately half of the control subjects showed gains for these same subtests. The gains for individual subjects also were greater, with a range of 1 to 13 point gains for CRS subjects, and 1 to 7 points for controls. However, while greater gains were made by the CRS group on language measures, these differences were not significant.

The TOLD-P measures only discrete subskills of language, and has no subtest measuring authentic language. Furthermore, no direct relationship existed between the items on the TOLD-P and the language encountered in the reading materials used in intervention. As a standardized measure, only a few items are included at each age equivalency. For example, on the Picture Vocabulary subtest, item number 4 is "bulb," item 8 is "winged," and item 12 is "monument." These characteristics of the test make it difficult for changes occurring as a result of intervention to be detected by the test. Despite this, seven of the nine CRS subjects did make gains on the Picture Vocabulary subtest, with individual subjects' gain scores ranging from 1 to 13 points. Gains among control subjects ranged from 1 to 6 points, and the mean gains for the CRS group were nearly seven times higher (4.55 vs .67).

On subtests that assessed language more frequently encountered when reading authentic language, such as grammatical structures or morphological forms (i.e., the

Grammatic Understanding, Grammatic Completion, and Word Discrimination subtests), all but one of the CRS subjects made gains. On the Grammatic Completion subtest, for example, individual subjects' gains ranged from 1 to 11 points. Gains among control subjects ranged from 1 to 7 points, with the mean gains for the CRS group more than twice that of controls (5.89 vs 2.66).

A ceiling effect was obtained for the Word Articulation subtest. Most of the subjects in both the treatment and control conditions exhibited adult-like speech at pretest, with 10 of 12 control subjects and all 9 CRS subjects responding correctly to nearly all 20 stimulus items. Neither group demonstrated a change from baseline, and essentially no change was obtained for most individual subjects.

Thus, while statistical differences were not found between groups, gains for individual subjects suggested that the CRS treatment does positively affect language abilities. Limitations inherent in the nature of the test, such as no measurement of authentic language and few items at relevant age levels, render short-term changes difficult to detect. A different measure of language should be sought in future research.

Effects of CRS across Time

Each reading and language measure was readministered four months post-intervention (i.e., the fall school term),

and at the end of the school year. The time and miscue measures of the kindergarten passage of Bear and Fly reading were significant at four months, and the Picture Vocabulary gain was significant at the end of the school term. Moreover, the gains for the CRS group at all points of measurement were greater for eight of eleven of the reading subtests, and for five of the eight language subtests at the end of one year.

All of the subjects in both the CRS and control condition were essentially non-readers at pretest. On the standardized reading passage, small gains made large differences. Furthermore, the subjects were relatively homogeneous, resulting in small standard deviations. A difference of four points in gain scores between groups resulted in significance immediately following intervention. A seven point difference in gain scores by the end of the school year was not significant, in part because of large standard deviations that reflected the heterogeneity between group members at that point.

Many educational differences were experienced by subjects during the ensuing school year, both within and between groups. The children attended nine different schools, five private and four public. They also were provided reading instruction in programs representing different educational philosophies and practices. Four treatment and six control subjects received reading

instruction in the regular classroom. Three in each group were retained in first grade. One in each group was placed in a dyslexia program, and one in each group received outside tutoring. Three control and one CRS subjects received help in a resource room, while two treatment and one control subject participated in Chapter I reading. These different educational experiences make it difficult to determine the effects of treatment one year post-intervention.

Limitations of the Research

The results of this study are positive in that it provided empirical support for an integrated approach to reading that could benefit children at risk for reading failure. However, the study was not without limitations.

First, although all significant differences and trends in the data favored CRS in reading measures, the failure to reach statistical significance across all time intervals limits the interpretations of the results. The trends, being nonsignificant, must be interpreted with caution.

Second, the power of the statistical measures is reduced by sample size. This limits the interpretation as it is not evident if the nonstatistical results are an effect of sample size or the actual intervention. The small sample size also limits generalizability of findings. Replication with larger groups, and at different age/grade levels will be necessary to confirm the validity of the findings.

Third, CRS is a complex approach which can be affected by the instructional delivery model. Research shows the administration of reading models is effected by teacher judgement, flexibility, and knowledge of the learning that is being accomplished (Wasik & Slavin, 1993). Effective implementation of CRS specifically requires an in depth understanding of language, and strategies that can facilitate language processing in context. Unlike many skill based interventions that can be implemented by individuals with minimum training, CRS provides maximum flexibility, but requires training under closely monitored conditions.

Fourth, the subjects were selected according to criteria that identified both a reading and an oral language delay. However, different profiles of reading were present at pretest, with some subjects exhibiting better word recognition skills but poor comprehension, and others presenting the opposite profile. No attempts were made to identify subgroups, or to examine differences in performance according to varying profiles. Larger group numbers would be required to examine the effects of CRS intervention on these subtypes of poor readers.

Finally, no qualitative measures of language and reading were obtained in this study. Qualitative studies that evaluate the differences in reader attitudes or stress levels resulting from CRS treatment compared to others methods of instruction need to be obtained. This might determine if

more holistic measures effect attitudes and stress levels differently.

Future research

Results of this study offer several suggestions for future research. CRS has been investigated in a limited number of studies. Only two other studies (Badon, 1993; Hernandez, 1989) have specifically investigated the results of the use of CRS with children exhibiting language and reading delays. The populations of these studies were twenty-eight third grade poor readers, and four African-American first grade subjects experiencing reading failure. While the results of those studies also favored CRS intervention compared to direct instruction, many more replications are needed to validate the method as an appropriate intervention strategy for children with oral and language delays. Replications with larger numbers of children, and at many different age and ability levels are needed.

Bear and Fly was an authentic assessment measure designed specifically for use in this study. The instrument did not contain content or procedures that were designed to specifically assess the same behaviors as those focused on in intervention. The instrument was designed prior to selection of the actual curriculum for each treatment group. The selection of assessment measures is important in all studies. There is a need in future research to develop and use

authentic measures that do not measure specific tasks used in an intervention program. When teaching is holistic it should not be implemented in direct relation to any assessment measure.

Language has been identified as an underlying area of difficulty for children at risk for reading achievement. CRS uses oral language to enable poor readers to experience fluent reading, and uses print to assist children to learn how syntax and other complexities of language work to communicate meaning. Although this study assessed changes in oral language and found gains, the standardized test did not measure authentic language use and may not have been sufficiently discriminating to detect changes. Future research should use alternative measures of language, such as an analysis of story retelling.

Similarly, the results of this study suggest that a wide range of language skills are refined as a result of CRS treatment. Studies that examine different types of language skills in greater depth, including phonological awareness and other measures of decoding, need to be conducted to substantiate these initial findings.

CRS utilizes a collection of strategies to facilitate fluent reading and comprehension in poor readers. The differential effects of strategies such as preparatory sets, expansions, expatiations, and parsing need to be explored to

determine how each strategy impacts on reading recognition and comprehension.

Current research suggests that remediation of reading-language difficulties is most effective in early grades. The efficacy of the use of CRS with populations of adults who are functionally illiterate (i.e., third grade reading or below) is currently in progress. Further studies that examine the use of the strategies with older populations need to be conducted to determine if there is a critical period for reading acquisition, and if CRS is effective in generating a change in older subjects.

There is a need to investigate the long-term effects of CRS intervention. This includes examining the effects on continuing academic achievement, referral to special educational programs, and retention rates. Studies that provide intervention until grade appropriate reading is achieved should be used to determine if these gains are maintained when no special support is provided.

This study investigated the effects of CRS compared to a control group. Previous studies have compared it to direct instruction, representing remedial programs that do not address language needs. It is important to directly compare CRS to other programs that have been successful in remediating reading and language difficulties, such as Reading Recovery (Clay, 1993).

This study has presented findings that offer preliminary support for the efficacy of the use of CRS with low achieving beginning readers. It also lends support to theoretical models, such as whole language and connectionism, that propose a strong interrelationship among all levels of language processing during reading. The study suggests that while direct instruction on any specific level may be effective in teaching that skill, it may not be necessary to effect changes in those skills. Greater changes across a continuum of language processes may be obtained by working holistically. Future research will be required to explore these theoretical issues, and to add to our understanding of the complex process of reading.

REFERENCES

Afflerbach, P. (1987). How are main idea statements constructed? Watch the experts. Journal of Reading , 30(6), 512-518.

Allington, R. L. (1989). Coherence of chaos? Qualitative dimensions of the literacy instruction provided low-achievement children. In A. Gartner & D. Lipsky (Eds.), Beyond separate education. New York: Brookes.

American Speech-Language-Hearing Association Committee on Language Learning Disorders. (1982). Position statement on language learning disorders. ASHA, 24, 937-944.

Anders, P.L., Bos, C.S., & Felip, D. (1984). The effect of semantic feature analysis on the reading comprehension of learning disabled students.National Reading Conference Yearbook, 33, 162-166.

Anderson, R.C., & Pearson, P.D. (1984). A schema-theoretic view of basic processes in reading comprehension. In P.D. Pearson (Ed.), Handbook of Reading Research. New York: Longman.

Anderson, R. C., Hiebert, E. H., Scott, J.A. & Wilkinson, I.A.G. (1985). Becoming a nation of readers: The report of the commission on reading. Washington, D.C.: National Institute of Education.

Anderson, R.C., Reynolds, R.E., Schallert, D. L., & Goetz, E. T. (1977). Frameworks for comprehending discourse. American Educational Research Journal, 14, 367-82.

Aram, D. H., Ekelman, B.L., & Nation, P. (1984). Preschoolers with language disorders: 10 years later. Journal of Speech and Hearing Research, 27, 232-244.

Ausubel, D.P. (1960). The use of advance organizers in learning and retention of meaningful material. Journal of Educational Psychology, 51, 267-272.

Ausubel, D.P., & Fitzgerald, D. (1961). The role of discriminability in meaningful verbal learning and retention. Journal of Educational Psychology, 52, 266-274.

Badon, L. (1993). Comparison of word recognition and story retelling under the conditions of contextualized versus

decontextualized reading events in at-risk poor readers. Unpublished Dissertation, Louisiana State University.

Bean, T.W., & Steenwyk, F.L. (1984). The effect of three forms of summarization instruction on sixth graders' summary writing and comprehension. Journal of Reading Behavior, 16, 297-306.

Berk, L.E. (1976). How well do classroom practices reflect teacher goals? Young Children, 32(1), 64-81.

Bishop, D., & Adams, C. (1990). A prospective study of relationship between specific language impairment, phonological disorders, and reading retardation. Journal of Child Psychology and Psychiatry, 21, 1027-1050.

Blachman, B. (1994). Early literacy acquisition: The role of phonological awareness. In G. Wallach & K. Butler (Eds.), Language learning disabilities in school-age children and adolescents: Some principles and applications. New York: Macmillan.

Boehnlein, M. (1987). Reading intervention for high-risk first-graders. Educational Leadership, 44(6), 32-37.

Borg, W.R., & Gall, M.D. (1989). Educational research: An introduction. NY: Longman.

Bos, C.S., Anders, P.L., Felip, D. & Jaffe, L.E. (1984). Cognition and Instruction, 42-47.

Bos, C.S., Anders,P.L., Felip,D. & Jaffe, L.E. (1985). Semantic feature analysis and long-term learning. National Reading Conference Yearbook, 34, 42-72.

Bos, C.S., Anders,P.L., Felip,D. & Jaffe, L.E. (1988). The effects of interactive instructional strategies for enhancing learning disabled students' reading comprehension and content area learning. Journal of Learning Disabilities.

Boyd, W. McK. (1973). Repeating questions in prose learning. Journal of Educational Psychology, 64, 31-38.

Brown, A.L. & Palinscar, A.S. (1982). Inducing strategic learning from texts by means of informed, self-control training. Topics in Learning and Learning Disabilities, 2, 1-17.

Brown, A.L., & Palinscar, A.S., & Armbruster, B.B. (1984). Instructing comprehension fostering activities

in interactive learning situations. Learning and comprehension of text. Hillsdale, NJ: Lawerence Erlbaum and Associates.

Bruce, B. (1981). A social interaction model of reading. Discourse Processes, 4, 273-309.

Bruce, B., & Newman, D. (1978). Interacting plans. Cognitive Science, 2, 195-233.

Bruner, J. (1978). How to do things with words. In J. Bruner & A. Garton (Eds.), Human growth and development. Oxford: Oxford University Press.

Bruner, J. (1986). Actual minds, possible worlds. Cambridge, MA: Harvard University Press.

Bryant, B.R., & Weiderholt, J.L. (1991). Grey Oral Reading Test-Diagnostic. Pro-Ed, Austin, TX.

Burgemeister, B., Blum, L., & Lorge, I. (1972). Columbia Mental Maturity Scale. San Antonio, TX: The Psychological Corporation.

Burnes, B. (1991, Dec.2). The best schools in the world: Reading in New Zealand, good reading and writing come "naturally". Newsweek, 50-54.

Cambourne., B. (1984). Language, learning and literacy. In A. Butler and J., Turbill (Eds.), Towards a Reading-Writing Classroom. Rozelle, NSW, Australia: Primary English Teaching Association.

Cambourne, B. (1988). The whole story: Natural learning and the acquisition of literacy in the classroom. Auckland, New Zealand: Ashton Scholastic Ltd.

Cambourne, B., & Turbill, J. (1991). Coping with chaos. Portsmouth, NH: Heinemann.

Carbo, M. (1978). Teaching reading with talking books. Reading Teacher, 32, 267-273.

Carbo, M. (1988). The evidence supporting reading styles: A response to Stahl. Phi Delta Kappan, 70, 323-327.

Catts, H. (1986). Speech production/phonological deficits in reading disordered children. Journal of Learning Disabilities, 19, 504-508.

Catts, H. (1991). Phonological preocessing deficits and reading disabilities. In A.G. Kamhi & H.W. Catts

(Eds.), Reading Disabilities: A developmental language perspective. Needham Height, MA: Allyn and Bacon.

Catts, H. (1991). Early identification of reading disabilities. Topics in Language Disorders, 12, 1-16.

Catts, H. (1993). The relationship between speech-language impairments and reading disorders. Journal of Speech and Hearing Research,36, 948-959.

Catts, H., & Kamhi, A. (1986). The linguistic basis of reading disorders : Implications for the speech-language pathologist. Language, Speech, and Hearing Services in Schools, 17(4), 329-341.

Catts, H., & Kamhi, A.(1987). The relationship between reading and language disorders: Implications for the speech-language pathologist. Seminars in Speech and Language, 8, 377-392.

Cazden, B. (1986). Classroom discourse. In M.E. Wittrock (Ed.), Handbook of research on teaching. New York: Macmillan.

Cazden, B. (1988). Interactions between Maori students and Pakeha teacher. Auckland, MZ: Auckland Reading Council.

Chall, J.S. (1983). Learning to read: The great debate. New York: McGraw-Hill.

Choate, J.S., & Rakes, J.A. (1989). Reading: Detecting and correcting special needs. Boston: Allyn and Bacon, Inc.

Chomsky, N. (1957). Syntactic structures. The Hague: Mouton.

Chomsky, N. & Halle, M. (1968). The sound pattern of English. New York: Harper and Row.

Clark, E. (1993). The Lexicon in Acquisition. Cambridge, England: Cambridge University Press.

Clark, H.H. (1983). Making sense of nonce sense. In G. F. D'Arcais & R. J.Jarnela (Eds.), The process of language understanding (pp. 297-331). Chichester, England: Wiley.

Clay, M.M. (1972). Reading: The patterning of complex behavior. Auckland, New Zealand: Heinemann.

Clay, M.M. (1979). Reading: The patterning of complex behavior (2nd ed.). Auckland, New Zealand: Heinemann Educational.

Clay, M.M. (1982). Observing young readers. Auckland, New Zealand: Heinemann.

Clay, M.M. (1985). The early detection of reading difficulties. Exeter, NH: Heinemann.

Clay, M.M. (1993). An observation survey: Of early literacy achievement. Portsmouth, NH: Heinemann.

Clay, M.M., & Cazden, C.B. (1990). A Vygotskian interpreteation of Reading Recovery. In L. Moll (Ed.), Vygotsky and education. New York: Cambridge University Press.

Cohen, D. (1968). The effect of literature on vocabulary and reading achievement. Elementary English, 45, 209-213, 217.

Cole, G. (1987). The learning mystique: A critical look at learning disabilities. New York: Pantheon.

Colwell, C.G. (1982). Paragraph processing: A direct-functional-interactive model. Reading Improvement, 19, 13-24.

Crais E. R., & Chapman, R. S. (1987). Story recall and inferencing skills in language/learning-disabled and nondisabled children. Journal of Speech and Hearing Research, 52, 50-55.

Cullinan, B., Jagger,A., Strickland, D. (1974). Language expansion for black children in the primary grades: A research report. Young children, 29, 98-112.

Darch, C.B., Carnine, D.W., & Kameenui, E.J. (1986). The role of graphic organizers and social structure in content area instruction. Journal of Reading Behavior, 18, 275-295.

Deford,D., Pinnell, G.S. Lyons, C., & Young, P. (1988). Reading Recovery: Volume IX, Report of the follow-up studies. Columbus, OH: Ohio State University.

Dowhower. S.L. (1987). Effects of reapeated reading on second-grade transitional readers' fluency and comprehension. Reading Research Quarterly, 22(4), 389-406.

Dowhower. S.L., & Speidel, G.E. (1987). Let's teach unskilled readers like skilled reaaders: A closer look at meaning-based instruction. Reading Research and Instruction, 28(2), 50-60.

Drum, P. A. & Madison, J. (1985). Vocabulary instruction: A conversational format. National Reading Confereence Yearbook, 34, 89-96.

Duffy, G.G. & Roehler, L.R. (1987). Improving reading instruction through the use of responsive elaboration. The Reading Teacher, 40, 514-520.

Durkin, D. (1966). Children who read early. Teachers College Press.

Durkin, D. 1978-1979. What classroom observations reveal about reading comprehension instruction. Reading Research Quarterly, 16, 515-544.

Eldredge, J.L., & Butterfield, D. (1986). Alternatives to traditional reading instruction. The Reading Teacher, 40, 32-37.

Ellson, D.G., Barber, L., Engle., T.L., & Kampwerth, L., (1965). Programmed tutoring: A teaching aid and a research tool. Reading Research Quarterly, 1, 77-127.

Ellson, D.G., Harris, P., & Barber, L., (1968). A field test of programmed and directed tutoring. Reading Research Quarterly, 3, 307-367.

Ferreiro, E. (1986). The interplay between information and assimilation in beginning literacy. In W. Teale & E. Sulzby (Eds.), Emergent literacy: Writing and reading (pp. 15-49). Norwood, NJ: Ablex.

Fey, M.E. (1988). Gerneralization isssue facing language interventionists: An introduction. Language, Speech and Hearing Service in Schools, 19, 272-281.

Fielding, L., Wilson, P.T., & Anderson, R.C. (1984). A new focus on free reading: The role of trade books in reading instruction. In T.E. Rapheal (Ed.), The Contexts of School-Based Literacy (pp. 149-159). New York: Random House.

Fitzgerald, J. (1990). Reading Comprehension Instruction 1783-1787: A Review of Trands and Research. Newark, DE: International Reading Association.

Froese, V., & Kurushima, S. (1979). The effects of sentence expansion practice on the reading comprehension and writing ability of third-graders. Reading research: Studies and applications. Clemson, SC: National Reading Conference, 95-99.

Fry, E.B. (1977). Fry's readability graph: Clarifications, validity, and extension to level 17. Journal of Reading, 21, 242-252.

Fry, M., Johnson, C., & Muehl, S. (1970). Oral language production in relation to reading achievement among select second graders. In D. Bakker and P. Satz (Eds.), Advances in theory and method (123-159). Rotterdam: Rotterdam University Press.

Gibbs, D.B., & Cooper, E.B. (1989). Prevalence of communication disorders in students with learning disabilities. Journal of Learning Disabilities, 22, 60-63.

Golden, J.M. (1990). The narrative symbol in childhood literature: Exploration in the construction of text. New York: Mouton de Gruyter.

Goldfield, B. A., & Snow, C. E. (1984). Reading books with children: The mechanics of parental influences on children's reading achievement. In J. Flood (Ed.), Understanding reading comprehension (204-215). Newark, DE: International Reading Association.

Goodman, K.S. (1973). On the psycholoinguistic methold of teaching reading. In F. Smith (Ed.), Psycholoinguistics and reading. New York: Holt, Rinehart, and Winston.

Goodman, K.S. (1976). Reading a psycholinguistic guessing game. Journal of the Reading Specialist, 4, 162-35.

Goodman, K.S. (1982). Behind the eye: What happens in reading. In K.S. Goodman and O.S. Niles (Eds.), Language and Literacy: The selected writings of Kenneth S. Goodman. Vol. 2, ed. F.V. Gollasch. London: Routledge & Keagan Paul. [Originally published in Reading Process and Program, Urbana: National Council of Treachers of English, Commission on the English Curriculum, 1970.]

Goodman, K.S. (1985). Transactional psycholinguistic model: Unity in reading. In H. Singer & R.B. Ruddell (Eds.), Theoretical models and processes of reading (pp. 813-840). Newark, DE: International Reading Association.

Goodman, K.S. (1986). What's whole in whole language? Portsmouth, NH: Heinemann.

Goodman, K.S. (1988). Look what they've done to Judy Blume: The basalization of childrens literature. The New Advocate, 1, 29-41.

Goodman, K.S., Shannon, P., Freeman, Y., & Murphy, S. (1988). Report card on basal readers, New York: Richard C. Owen.

Hall, P. K., & Tomblin, J.B. (1978). A follow-up study of children with articulation and language disorders. Journal of Speech and Hearing Disorders, 43, 227-241.

Handerhan, E. (1990). Reading instruction as defined by "successful" teachers and their first-grade students within an early intervention program. Dissertation Abstracts International, No. AAC910512.

Hansen, J. (1981) An inferential comprehension strategy for use with primary grade children. The Reading Teacher, 34, 665-669.

Hansen, J., & Pearson, P.D. (1983). An instructional study: Improving the inferential comprehension of good and poor fourth-grade readers. Journal of Educational Psychology, 75, 821-829.

Hayes, D.A. & Tierney, R.J. (1982). Developing readers' knowledge through analogy. Reading Reading Quarterly, 17, 256-280.

Heath, S.B. (1983). Ways with words: Language, life and work in communities and classroom. Cambridge: Cambridge University Press.

Heath, S.B., Thomas, C., & Branscombe, A. (1986). The book as narrative: Prospectives in language acquisition. In B.B.Schieffelin & P. Gilmore (Eds.), The Acquisition of Literacy: Ethnographic Perspectives. Norwood, N.J. Ablex.

Herman, P.A. (1985). The effect of repeated readings on reading rate, speech pauses, and word recognition accuracy. Reading Research Quarterly, 20, 553-565.

Hernandez, S.N. (1989). Effects of Communicative Reading Strategies on the reading behaviors of third grade poor readers. Unpublished doctoral dissertation, Louisiana State University.

Hill, S.S., & Haynes, W.Y. (1992). Language performance in low-achieving elementary school students. Language, Speech and Hearing Services in Schools, 23, 160-175.

Hoffman, J.V. (1987). Rethinking the role of oral reading in basal instruction. Elementary School Journal, 87, 367-374.

Hoffman, P.R. & Norris, J.A. (1994). Whole Language and collaboration work: Evidence from at-risk kindergarteners. Journal of Childhood Communication Disorders, 16, 41-48.

Hoffman, P.R., Norris, J.A., & Monjure, J. (1990). Comparison of ppreocesss targeting and whole lanugage treatments for phonologically impaired preschool children. Language,Speech & Hearing Services in Schools, 21, 102-109.

Holdaway, D. (1979). The foundations of literacy. Portsmouth, NH: Heinemann.

Holdaway, D. (1982). Shared Book Experience: Teaching reading using favorite books. Theory Into Practice, 21, 293-300.

Inhelder, B., & Piaget, J. (1958). The growth of logical thinking from childhood to adolescence. New York: Basic Books.

Johns, J.L. (1984). Students' perceptions of reading: Insights from research and pedagogical implications. In J. Downing and R. Valtin (Eds.), Language awareness and learning to read (pp. 57-77). New York: Springer-Verlag.

Johnson, D., & Pearson, P.D., (1978). Teaching reading vocabulary. New York: Holt, Rinehart, & Winston.

Johnston, P., & Afflerbach, P. (1985). The process of constructing main ideas from text. Cognition and Instruction, 2, 207-232.

Kamhi, A., Catts, H. (1989). Reading disabilities: A developmental language perspective. Boston: College-Hill.

Kamhi, A., Catts, H., Mauer, D., Apel, K., & Gentry, B. (1988). Phonological and spatial processing abilities in language and reading impaired children. Journal of Hearing and Speech Disorders, 53, 316-327.

Katz, J.J., & Fodor, J.A. (1963). The structure of a semantic theory. Language, 39, 170-210.

Katz, R. (1986). Phonological deficienceies in children with reading disability: Evidence form an object-naming task. Cognition, 22, 225-257.

Kintsch, W. (1974). The representation of meaning in memory. Hillsdale, NJ: Lawrence Erlbaum and Associates.

Langer, J.A. (1982). Facilitationg text processing: The elaboration of prior knowledge. In J.A. Langer & M. Smith-Burke (Eds.), Reader Meets Author: Bridging the Gap. Newark, DE: International Reading Association.

Landeche, T. (1992). Emergent literacy in at-risk children participating in a whole language versus reading readiness curriculum. Unpublished master's thesis, Louisiana State University, Baton Rouge.

Larrick, N. (1987). Illiteracy starts too soon. Phi Delta Kappan, 69, 184-189.

Lerner, J. (1985). Learning Disabilities. Fourth Edition. Boston: Houghton Mifflin.

Maden, N.A., & Slavin, R.E. (1989). Effective pullout programs for students at risk. In R.E. Slavin, N.L. Karweit,& N.A. Madden (Eds.), Effective programs for students at risk. Needham Heights, MA: Allyn & Bacon.

Mandler, J., and Johnson, N. (1977). Remembrance of things parsed: Story structure and recall. Cognitive Psychology, 9, 111-51.

Maria, K. (1989). Developing disadvantaged children's background knowledge interactively. The Reading Teacher, 42: 296-300.

Maria, K. (1990). Reading comprehension instruction: Issues and strategies. Parkton, MA: York Press.

Maria, K., & MacGinitie, W. H., (1987). Learning from texts that refute the reader's prior knowledge. Reading Research and Instruction, 26, 222-38.

Marzano, R.J., & Marzano, J.S.(1988). A cluster approach to elementary vocabulary instruction. Newark, DL: International Reading Association.

McClelland, J.L. (1976). Preliminary letter identification in perception of words and nonwords. Journal of

Experimental Psychology: Human Perception and Performance, 2, 80-91.

McClelland, J.L. (1989). Parallel distributed processing: Implications for cognition and development. In R.G.M. Morris (Ed.), Parallel distributed processing: Implications for psychology and neurobiology (pp. 8-45). NY: Oxford University Press.

McCormick, S., & Hill, D.S. (1984). An analysis of the effects of two procedures for increasing disabled readers' inferencing skills. Journal of Educational Research , 77, 219-226.

Medo, M.A., & Ryder, R.J. (1993). The effects of vocabulary instruction on readers's ability to make causal connections. Reading Research and Instruction, 33 (2), 119-134.

Memory, D.M. (1981). An extended comparison of adjunct aids with low-average and good readers in the sixth grade. Journal of Educational Research, 74, 405-410.

Memory, D.M. (1983). Main idea prequestions as adjunct aids with good and low-average grade readers. Journal of Reading Behaviors, 15, 37-48.

Merritt, D., & Liles, B. (1989). Narrative analysis: Clinical application of story generation and story telling. Journal of Speech and Hearing Disorders, 54, 438-447.

Miller, L., & Dyer, J.L. (1975). Four preschool programs: Their dimensions and effects. Monographs of the Society for Research in Child Development, 40 (5-6, Serial No. 162).

Morris, D., & Nelson, L. (1993). Supporting oral reading with low-achieving second graders. Reading Research and Instruction ,32(2), 49-63.

Morrow, L.M. (1987). Promoting intercity children's recreational reading. The Reading Teacher, 41, 266-75.

Nagy, W.E. (1988). Teaching Vocabulary to Improve Reading Comprehension. Newark, DE: International Reading Association.

Nagy, W.E. & Anderson, R.C. (1984). How many words are there in printed school English? Reading Research Quarterly, 19, 304-30.

Nagy, W.E., Anderson, R.C., & Herman, P. (1987). Learning word meanings from context during normal reading. American Educational Research Journal, 24, 237-70.

Nelson, K. (1985). Making sense: The acquisition of shared meaning. New York: Academic Press.

Nelson, K. (1986). Event knowledge: Structure and function in development. Hillsdale, NJ: Lawerence Erlbaum and Associates.

Nelson, K. (1989). Narratives from the crib. Cambridge, MA: Harvard University Press.

Newcomer, P.L., & Hammill, D.D. (1988). Test of Language Development-2-Primary. Austin, TX: Pro-ed.

Nobel, T.H. (1982). The day Jimmy's boa ate the wash. New York: Dial Press.

Norris, J.A. (1985). Communicative reading strategies: Treating language as a communication process. Journal of the Nebraska Speech-Language-Hearing Association, 22, 6-9.

Norris, J.A. (1988). Using communication strategies to enhance reading acquisition. The Reading Teacher, 41, 668-673.

Norris, J.A. (1989). Providing language remediation in the classroom: An integrated language-to-reading intervention method. Language, Speech & Hearing Services in Schools, 20, 205-219.

Norris, J.A. (1989). Facilitating developmental changes in spelling. Academic Therapy, 25, 97-108.

Norris, J.A. (1991). From frog to prince: Using written language as a context for language learning. Topics in Language Disorders, 12(1), 1-6.

Norris, J.A.(1992). Learning to talk through literacy: Whole language for handicapped preschoolers. In Perspectives on whole language: Past, present, potential (pp. 148-156). Columbia, MO: Instructional Materials Laboratory, University of Missouri.

Norris, J.A., & Bruning, R.H. (1988). Cohesion in the narratives of good and poor readers. Journal of Speech and Hearing Disorders, 53, 416-424.

Norris, J.A., & Hoffman, P. (1990). Language intervention within naturalistic environments. Language, Speech and Hearing Services in Schools, 21, 72-84.

Norris, J.A., & Hoffman, P. (1992). Whole language in speech-language pathology. Education/learning correlates of communication disorders newsletter. Rockville, Maryland.

Norris, J.A., & Hoffman, P. (1993). Whole language intervention for school-age children. San Diego: Singular Publishing Group Inc.

Norris, J.A. & Hoffman, P.R. (1994). Wholde Language and representational theories: Helping children to build a network of association. Journal of Childhood Communication Disorders, 16, 5-12.

O'Shea, L.J., Sindelar, P.T., and O'Shea, D.J., (1985). The effects of repeated readings and attentional cues on reading fluency and comprehension. Journal of Reading Behavior, 17, 129-142.

Palinscar, A.S., (1982). Improving the reading comprehension of junior high school students through the reciprocal teaching of comprehension monitoring skills. Unpublished dissertation. Urbana, IL: University of Illinois.

Palinscar, A.S. (1986). The role of dialogue in providing scaffolded instruction. Educational Psychologist, 2, 73-98.

Palinscar, A.S., & Brown, A.L. (1984). Reciprocal teaching of comprehension fostering and comprehension activities. Cognition and Instruction, 1, 117-175.

Palinscar, A.S., & Brown, A.L. (1985). Reciprocal teaching: Activities to promotoe "reading with your mind." In T.L. Harris and E.J.Cooper (Eds.), Reading, Thinking and Concept Development. New York: College Entrance Examination Board.

Palinscar, A.S., & Brown, A.L. (1987). Enhancing instructional time through attention to metacognition. Journal of Learning Disabilities, 20, 66-76.

Palinscar, A.S., & Brown, A.L. (1988). Interactive teaching to promote independent learning from text. The Reading Teacher, 39, 771-77.

Palinscar, A.S., & Brown, A.L. (1989). Classroom dialogues to promote self-regulated omprehension. In J. Brophy (Ed.), Teaching for Understanding and Self-Regulated Learning, New York: JAI Press.

Pearson, P.D. (1985). Changing the face of reading comprehension instruction. The Reading Teacher, 38, 724-38.

Piaget, J. (1952). The language and thought of the child. London: Routledge & Kegan Paul.

Piaget, J. (1975). The development of thought. Oxford: Blackwell.

Pinnell, G.S. (1985). Helping teachers help children at risk:Insights from the reading recovery program. Peabody Journal of Education, 62(3), 70-85.

Pinnell, G.S. (1989). Reading Recovery: Helping at-risk children learn to read. Elementary School Journal, 90, 161-182.

Pinnell, G.S., Deford, D.E., Bryk, A.S., & Seltzer, M. (1994). Comparing instructional models for the literacy education of high risk first graders, Reading Research Quarterly, 1, 9-39.

Pinnell, G.S., Lyons, C.A., Deford, D.E., Bryk, A.S., & Seltzer, M. (1991). Studying the effectiveness of early intervention approaches for first grade children having difficulty in reading. Columbus, Ohio State University, Martha L. King Language and Literacy Center.

Rashotte, C.A., & Torgesen, J.K. (1985). Repeated readings and reading fluency in learning disabled children. Reading Research Quarterly , 20, 180-188.

Readance, J.E., Baldwin, R.S., & Head, M.H. (1987). Teaching young readers interpret metaphors. The Reading Teacher, 40, 439-443.

Reid,D. K., Hresko, W.P., & Hammill, D.D., (1981). Test of Early Reading. Austin, TX: Pro-Ed.

Reutzel, D.R. , & Fawson, P. (1991). Literature webbing predictable books: A prediction strategy that helps below-average, first-grade readers. Reading Research and Instruction, 30(4), 20-29.

Reutzel, D. R., Hollingsworth, P.M., & Eldredge, J. L., (1994). Oral reading instruction: The impact on

student reading development. Reading Research Quarterly, 1, 41-59.

Rickards, J.P. & DeVesta, F.J. (1974). Type and frequency of questions in processing textual material. Journal of Educational Psychology, 66, 354-362.

Rinehart, S.D., Stahl, S.A. & Erickson, L.G. Some effects of summarization training on reading and studying. Reading Research Quarterly, 21, 422-438.

Rinehart, S. D., & Welker, W.A. (1992). Effects of advance organizers on level and time of text recall. Reading Research and Instruction, 32(1), 77-86.

Rippich, D.N., & Griffith, P.L. (1988). Narrative abilities of children with learning disabilities and nondisabled children: story structure, cohesion, and propositions. Journal of Learning Disabilities, 21, 165-173.

Ribowsky, H. (1985). The effects of a code emphasis approach and a whole language approach upon emergent literacy of kindergarten children. (Reports No. CS - 008-397). (ERIC Document Reproduction Service No. ED # 720).

Roth, F.P., & Spekman, N.J. (1986). Narrative discourse: Spontaneously-generated stories of learning-disabled and normally achieving students. Journal of Speech and Hearing Disorders, 51, 8-23.

Routman, R. (1991). Invitations: Changing as teachers and learners K-12. Portsmonth, NH: Heinemann.

Rubin, H., & Liberman, I.Y. (1983). Exploring the oral and written language errors made by language disabled children. Annals of Dyslexia, 23, 111-20.

Ruddell, R., & Haggard, M.R. (1986). Thinking About Reading. Cleveland, OH: Modern Curriculum Press.

Rumelhart, D.D. (1977). Toward an interactiv emodel of reading. In S. Dornic (Ed.) Attention and Performance, Vol. 6. Hillsdale, NJ: Lawerence Erlbaum and Associates.

Rumelhart, D.D. (1980). Schemata: The building blocks of cognition. In R.J. Spiro & B.C.Brune (Eds.), Theoretical issues in reading comprehension (pp. 1-20). Cambridge, MA: MIT Press.

Rumelhart, D.E., & McClelland, J. (1986). Parallel Distributed Processing: Explorations in the microstructure of cognition: Vols. I & II. Cambridge, MA: MIT Press.

Samuels, S.J., & Kamil, M.L. (1984). Models of the reading process. In P.D. Pearson (Ed.), Handbook of Reading Research (185-224). New York: Longman.

Samuels, S.J. (1985). Automaticity and repeated reading. In J. Osborn, P.T. Wilson, and R.C. Anderson (Eds.), Reading education Foundations for literate America (pp. 215-230). Lexington, MA: Lexington Books.

Searle, J. (1969) Speech acts: An essay in the philosophy of language. Cambridge, England: Cambridge University Press.

Seidenberg, M.S., & McClelland, J.L. (1989). A distributed, developmental model of word recognition and naming. Psychological Review,94(4), 523-568.

Shaywitz, S.E., Escobar, M.D., Shaywitz, B.A., Fletcher, J.M., & Makuch, R. (1992). Evidence that dyslexia may represent the lower tail of a normal distribution of reading ability. The New England Journal of Medicine, 326(3), 145-150.

Silver, A.A., & Hagin, R.A. (1990). Disorders of Learning in Childhood. New York: John Wiley & Sons.

Slavin, R.E., Karweit, N.L., & Madden, N.A. (1989). Effective programs for students at risk. Boston: Allyn and Bacon.

Slavin, R.E., Madden, N.A., Karweit, N.L., Livermon, B.J., & Dolan, L. (1990). Success for All: First- year outcomes of a comprehensive plan for reforming urban education. American Educational Research Journal, 27 (2), 255-278.

Slavin, R.E., Madden, N.A., Karweit, N.L., Dolan, L. & Wasik, B.A. (1992). Success for All: A relentless approach to prevention and early intervention in elementary schools, Arlington, VA: Educational Research Service.

Smith, Frank (1978). Understanding Reading. Second edition. New York: Holt, Rinehardt, and Winston.

Smith, Frank (1985). Reading without nonsense. New York: Teachers College Press.

Smith, Frank (1986). Understanding reading. Hillsdale, NJ: Lawrence Erlbaum and Associates.

Smith, F. (1988). Understanding reading. Hillsdale, NJ: Lawrence Erlbaum and Associates.

Snow, C. (1983). Literacy and language: relationships during the preschool years. Harvard Educational Review, 53, 165-187.

Snow, C., & Ninio, A. (1986). The contracts of literacy: What children learn from learning to read books. In W.H. Teal and E. Sulzby (Eds.), Emergent literacy: Writing and reading (pp. 116-138). Norwood, NJ: Ablex Publishing Corporation.

Standford Achievement Test. (1985). College Entrance Examination Board and Educational Testing Services. Princeton, N.J.

Stanovich, K.E. Childrens's reading and the development of phonological awareness. Detroit: Wayne State University.

Stanovich, K.E. (1986). Matthew effects in reading: some consequences of individual differences in the acquisition of literacy. Reading Research Quarterly, 21(4), 360-406.

Stauffer, R.G. (1975). Directing the Reading-Thinking Process. New York: Harper and Row.

Stein, N., & Glenn, C. (1979). An analysis of story comprehnension in elementary school children. In R. Freedle (Ed.), New directions in discourse processing, II. Norwood, NJ: Ablex.

Sulzby, E. (1985). Children's emergent reading of favorite storybooks: A developmental study. Reading Research Quarterly, 20(4), 485-481.

Taylor, N.E., Wade, M.R., & Yekovich, F.R. (1985). The effects of text manipulation and multiple reading strategies on the reading performance of good and poor readers. Reading Research Quarterly, 20, 566-574.

Taylor-Jones, H. (1993). The whole language classroom: Factors contributing to effective group storybook reading events. Unpublished master's thesis. Louisiana State University, Baton Rouge, LA.

Teale, W.H. (1984). Reading to young children: Its significance for literacy development. In H. Goelman, A. Oberg, and F. Smith (Eds.), Awakening to literacy (pp. 110-121). Portsmouth, NH: Heinemann.

Teale, W. & Sulzby, E. (1986). Emergent literacy: Writing and reading. Norwood, NJ: Ablex.

Thorndike, R.L. 1973. Reading as reasoning. Reading Research Quarterly, 9. 135-147.

Tierney, R.J., & Pearson, P.D. (1983). Toward a composing model of reading. Language Arts, 60, 568-80.

Tierney, R.J., Readence, J.E., & Dishner, E.K. (1990). Reading strategies and practices: A compendium. Boston: Allyn & Bacon.

Tierson, J.L. (1990). An introduction to connectionism. In J.L. Garfield (Ed.), Foundations of cognitive science: the essential readings (pp. 380-422). New York: Paragon House.

Trousdale, A. (1990). Interactive storytelling: scaffolding children's early narratives. Language Arts, 67, 164-173.

Tunnell, M. (1986). The natural act of reading: An affective approach. The Advocate, 5. 156-164.

van Kleeck, A. (1993). Metalinguistic development. In G. Wallach & K. Butler (Eds.), Language learning disabilities in school-age children and adolescents: Some underlying principles and applications. Columbus, Ohio: Merrill Macmillan.

Vellutino, F. (1977). Alternative conceptualizations of dyslexia: Evidence in support of a verbal-deficit hypothesis. Harvard Educational Review, 47, 334-354.

Vellutino, F.R.(1979). Dyslexia: Theory and Research. Cambridge, MA: MIT Press.

Vellutino, F.R. (1982). Theoretical issues in the study of word recognition: The unit of perception controversy re-examined. In S. Rosenberg (Ed.), Handbook of applied psycholinguistics (pp. 33-197). Hillsdale, NJ: Lawerence Erlbaum and Associates.

Vellutino, F.R. (1987). Dyslexia, Scientific American, 256(3), 34-41.

Vellutino, F.R. and Scanlon, D. (1982). Verbal processing in poor and normal readers. In C.J. Brarnard and M. Pressley (Eds.), Verbal Processes in children (pp. 189-264). New York: Springer-Verlag.

Vogel, S. (1974). Syntactic abilities in normal dyslexic children. Journal of Learning Disabilities, 10, 25-43.

Vogel, S. (1977). Morphological ability in normal and dyslexic children. Journal of Learning Disabilities, 10, 292-299.

Vygotsky, L.S. (1962). In E. Hanfmann & G. Vakar (Editor and Translator), Thought and language. Cambridge, MA: MIT Press.

Vygotsky, L.S. (1978). Mind in society: the development of higher psychological processes. Cambridge, MA: Harvard University Press.

Wagner, R. & Torgesen, J. (1987). The nature of phonological processing and its causal role in the acquisition of reading skills. Psychological Bulletin, 101, 192-212.

Wallach, M.A. & Wallach, L. (1976). Teaching all children to read. Chicago: University of Chicago Press.

Wasik, B.A., & Slavin, R.E. (1993). Preventing early reading failure with one-to-one tutoring: A review of five programs. Reading Research Quarterly, 28(2), 179-200.

Waters, S. (1993). Discourse structure in a kindergarten classroom: An examination of whole language interactions. Unpublished master's thesis, Louisiana State University, Baton Rouge.

Watson, D.J. (1989). Defining and describing whole language. Elementary School Journal, 90, 129-141.

Weaver, C. (1990). Understanding of Whole Language: From principles to practice. Portsmouth, NH: Heinemann.

Wertsch, (1985). Culture, communication and cognition: Vygotskian perspectives. Cambridge, N.Y.: Cambridge University Press.

Westby, C.E. (1985). Learning to talk - talking to learn: Oral-literate language differences. In C. Simon (Ed.), Communication skills for classroom success: Therapy methodologies (pp. 183-213). San Diego: College-Hill Press.

White, J.H., Vaughn, J.L., & Rorie, I.L., (1986). Picture of a classroom where reading is for real. The Reading Teacher, 40, 84-86.

Whitehurst, G.J., Falco, F., Lonigan, C.J., Fischal, J.E., DeBaryshe, B. D., Valdez-Manchaca, M.C., and Caulfied, M. (1988). Accelerating language development through picturebook reading. Developmental Psychology, 24, 552-559.

Wigfield, A., & Asher, S.R. (1984). Social and motivational influences on reading. In P.D. Pearson, R. Barr, M.L. Kamil, and P. Mosenthal (eds.), Handbook of research on reading (pp. 423-452). New York: Longman.

Wiig E.H., & Semel, E.M. (1984). Language assessment and intervention for the learning disabled. Columbus, OH: Charles E. Merrill.

Winter, P. (1976). The bear and the fly. New York: Crown Publishers, Inc.

APPENDIX A:
Teacher Questionnaire

Students Name _____
Teachers Name _____
School _____
We are interested in the performance of your student, _____. Your response to the following questions should be based on the child's classroom behavior and performance. This information will be used to decide inclusion in a research project only, and will not be included in the student's academic file, nor will it be shared with the parents.
The length of time child was in your classroom_____.

STRONGLY AGREE	AGREE	UNDECIDED NEUTRAL	DISAGREE	STRONGLY DISAGREE
1	2	3	4	5

1. This child has difficulty following directions.____
2. This child performs below average in reading skills.____
3. This child seems to be unmotivated in reading related activities._____
4. This child seems frustrated during reading activities._____
5. This child would benefit from assistance with reading._____
6. This child appears to be academically at risk._____
7. This child's achievement in reading seems lower than his potential for achievement._____
8. On the last book test this child scored below the _____ stanine.

Reading series/Current Placement

Level_____

Book score _____

APPENDIX B:
Consent for Participation Forms

Dear Principal:

A study is being conducted through the Department of Communication Disorders at LSU. The purpose of the project is to identify children who are having difficulty learning to read, and to examine instructional methods that can be used to improve reading. Approximately 30 children will participate, selected from your school and other schools in the district. We are interested in identifying children who are low achievers in reading, despite apparent normal cognitive abilities. Some of the participants will be evaluated for reading achievement, while others may participate in a remedial summer school program that will be offered at no cost to the parents.

We are seeking permission to allow children in your school to participate in this study. Participation would involve the following:

1. Teachers will be asked to identify low achieving readers by responding to a brief questionnaire. Teachers will then be asked to send permission for participation forms to those children who qualify and to collect those forms that are returned.
2. From the returned permission forms, the 30 best matched subjects will be selected for testing and/or participation in the summer program.
3. Students participating from your school would need to be released from class for approximately 2 hours of diagnostic testing by LSU graduate students in May, 1993. A quiet space would need to be provided for this testing.

During the summer, all participants will be retested at LSU. This will be arranged directly with parents and will not require the use of your school building or time.

If you have any questions please contact Melanie Michaelson at 388-2545 at LSU or at home at 925-0949.

Thank You.

Sincerely,

Melanie C. Michaelson, M.A./CCC-SLP
Researcher

Janet Norris, Ph.D.
Associate Professor

June 9, 1993

Mr. & Mrs. Smith
Address
Baton Rouge, Louisiana

Dear Mr. & Mrs. Smith:

Your child was screened at his/her school for participation in the LSU Reading Study. It was determined that he/she did not qualify for participation at this time.

Thank you so much for your help. If you have any questions please contact me at LSU at 388-2545 or at home 925-0949.

Sincerely,

Melanie C. Michaelson, M.S./CCC-SLP

Dear Parents:

Your child is invited to participate in a special project sponsored by LSU. Your child has been recommended for participation by his or her classroom teacher. The purpose of the project is to learn about how young children begin to read and how teachers can best help them to learn.

Participating children will be given tests that measure reading and other skills. These tests will be given 2 additonal times. The tests will help us to understand what children are learning about reading, and how much learning occurs during summer months.

The first testing was conducted at your child's school during the last two weeks in May. The second testing was in August at the LSU Speech and Hearing Clinic. The results of these tests will be treated confidentially. They will only be shared with you. The results of the project will appear in written reports, but your child's name will not appear in these reports. This testing will be done at no expense to you or your child's school. Similar testing in the community costs from $100-$400.

We will have a limited number of spaces in a summer school program to help children with their reading. Depending on test results, your child **MAY** be selected to participate in this program. To participate in the summer school program your child must be available to come to the LSU Speech and Hearing Clinic four mornings per week for one hour from June 14 to August 6. If your child does not qualify on the basis of test results, or cannot attend the 8 weeks of summer school, your child **MAY** be asked to return in August for one additional testing session. You will be paid $25.00 to cover your time and expenses for bringing your child to be tested in August.

If your child qualifies for the summer school program, it will be offered free of charge at LSU. Normally, the charge for this program is $200.00. This program will begin June 14 and end August 6th. It is very important that your child attend each of these sessions if he/she is selected and you choose to participate in the summer program.

Your child will benefit from this project in several ways. You will receive information on your child's reading and language abilities that will help teachers plan the best program next year. Children participating in the summer school program will get help with their reading.

ASSURANCE OF CONFIDENTIALITY

The information that we collect from this study will be treated confidentially. Only information about your child's test scores will be used. Your child's name will not appear anywhere in the research reports.

WITHDRAWAL FROM THE STUDY

Participation is voluntary on your part and on the part of your child. You can decide not to have your child's test scores included in the LSU study. If you decide to participate, you are free to withdraw your consent and to discontinue the study at any time.

If you have any questions you may contact the project coordinator: Melanie Michaelson, (388-2545) at LSU. Participation in the project requires the signature of a parent or guardian.

YOUR SIGNATURE INDICATES THAT YOU HAVE READ THE ABOVE INFORMATION AND ARE VOLUNTARILY AGREEING TO ALLOW YOUR CHILD TO BE TESTED.

_____
NAME OF PARTICIPATING CHILD

_____ _____
Signature of Parent or Legal Guardian Date

Please indicate whether your child _____,
will be available for the following: Child's name

My child will be available to participate in the summer program from June 14 to August 6 if he/she is selected.

My child can return for testing in August but will not be available for the 8 week summer program.

My child can not return in August for testing or participate in the summer program.

Dear Parents:

This is to confirm your participation in the LSU study. Your child will be participating in the program at LSU beginning June 14 and ending August 6.

This will be from _____on Mondays - Thursdays. We will meet at the Dean French House on Infirmary Road. You can arrange parking for the summer at the Visitor's Information Center on the corner of Highland Road and Dalrymple.

You will also be asked to schedule a <u>one time</u> testing session between August 10-19 for approximately 2-1/2 hours. After that time I will go over the tests and progress seen over the summer.

Thank you for your cooperation. If you have any questions please contact Raven Johnson, the secretary in the Communication Sciences and Disorders Department, or me at LSU or at home at 925-0949.

Sincerely,

Melanie C. Michaelson, M.S./CCC-SLP

Dear Parents:

This is to confirm your participation in the LSU study. Your child is part of the control group, which means they will receive extensive pre and post testing. It also requires that they have no tutoring for reading during the summer. The post testing will be between August 10-19. After that time I will be available to go over all the test results with you. I will be contacting you in late July to schedule you to bring your child to LSU one time for approximately 2-1/2 hours for the post testing.

If you will be changing addresses or phone numbers please contact Raven Johnson, the secretary at Communication Sciences & Disorders (388-2545) or me at home at 925-0949. Thank you so much for your participation.

Sincerely,

Melanie C. Michaelson, M.S./CCC-SLP

Dear Parents:

I am writing to confirm re-testing of your child for the LSU Reading Study. As I informed you at the last testing session in August, I will be returning to their schools to test for reading progress over the year.

The original letter was for permission for the May and August, 1993, testing. The enclosed letter is simply to grant permission for me to test them in their schools during December, 1993 and May, 1994. This will be arranged through the school and will not require you to bring your child to LSU. Please sign the form at your earliest convenience and return it in the stamped envelope.

I met with many of you after the August testing was completed. If any of you would like to meet regarding your child's testing or current progress, I am available. I am also available to talk with your child's teacher at your request. I can schedule a time that would be convenient to your schedule. You can reach me at home at 925-0949 or at LSU at 388-2545.

Thank you for your continued participation. It is our desire to develop methods that will help all children become better readers. Your participation is helping to make this possible.

Sincerely,

Melanie C. Michaelson, M.A./CCC-SLP
Instructor

Dear Parents:

Your child is invited to continue participation in a special project sponsored by LSU. Your child has been recommended for participation by his or her classroom teacher. The purpose of the project is to learn about how young children begin to read and how teachers can best help them to learn.

Participating children will be given tests that measure reading and other skills. These tests will be given 2 additonal times. The tests will help us to understand what children are learning about reading, and how much learning occurs during summer months.

The first testing was conducted at your child's school during the last two weeks in May. The second testing was in August at the LSU Speech and Hearing Clinic. The third testing will be in December, 1993, and the fourth testing will be in May, 1994. The last two testing sessions will be conducted at your child's school. The results of these tests will be treated confidentially. They will only be shared with you. The results of the project will appear in written reports, but your child's name will not appear in these reports. This testing will be done at no expense to you or your child's school. Similar testing in the community costs from $100-$400.

Your child will benefit from this project in several ways. You will receive additonal in depth information on your child's reading and language abilities that will help teachers plan the best program next year.

ASSURANCE OF CONFIDENTIALITY

The information that we collect from this study will be treated confidentially. Only information about your child's test scores will be used. Your child's name will not appear anywhere in the research reports.

WITHDRAWAL FROM THE STUDY

Participation is voluntary on your part and on the part of your child. You can decide not to have your child's test scores included in the LSU study. If you decide to participate, you are free to withdraw your consent and to discontinue the study at any time.

If you have any questions you may contact the project coordinator: Melanie Michaelson, (388-2545) at LSU. Participation in the project requires the signature of a parent or guardian.

YOUR SIGNATURE INDICATES THAT YOU HAVE READ THE ABOVE INFORMATION AND ARE VOLUNTARILY AGREEING TO ALLOW YOUR CHILD TO BE TESTED.

_____

NAME OF PARTICIPATING CHILD

_____ _____

Signature of Parent or Legal Guardian Date

May 27, 1994

Dear Parents:

I am writing to inform you that all of the testing for your childs' participation in the LSU Research Study has been completed. I have talked with many of you personally or by phone regarding testing. I have left messages on answer machines, talked to teachers and/or had conferences with resource personnel at several schools.

I have enjoyed having the opportunity to spend time with your children. Each one of your children have been important to our understanding of the reading process. I appreciate your willingness to allow them to participate in this study. Twenty-one children completed the program, representing 252 hours of testing, and 72 hours of intervention. Each of your children were administered 4 complete series of testing, the most recent in May, 1994. If you would like to meet with me at LSU or talk to me by phone regarding this testing, please call me at LSU at 388-2545 or at home at 925-0949.

Sincerely,

Melanie C. Michaelson, M.S./CCC-SLP

APPENDIX C:
Oral Reading Sample:
Transcript and Questions

KINDERGARTEN

Page

1. Mother and Daddy are eating.
The baby is eating.
They are all eating.

Question: Tell me what is happening?

2-3. Daddy said, "I see a fly."
"Look here, Baby!"
"Something is in the house."

Question: What does Daddy see?

4-5. What will Daddy do?
Mother said, "Help!"
Baby said, "I do not like this."

Question:
What does Baby mean by "I do not like this."
What is daddy going to do?

6-7. "My milk," said Baby.
"This is no fun."
"Mother, I want to go out and play."
Question:
Why does baby want to leave?

8-9. "I do not see that fly," said Daddy.
"Mother, do you see it?"
"Baby, do you see it?"

Question: Did Daddy kill the fly?/Where is the fly?"

FIRST GRADE

Page

10-11.
That fly is back again.
"Mother, maybe I'll get the fly if you don't move."
"Don't move, the fly is over your head."

Question: Where is the fly?

12-13.
"Look", the baby said, "She is still."
"Mother fell on the table."
"She fell in her food but I don't think she is asleep."

Question: Where did Mother fall?

14-15.
Daddy said, "I won't miss him next time."
"Where is that fly going?"
"Don't just let him fly out the window."

Question: Is the fly going out the window?
How do you know?

16-17.
"Next time I'll stop that fly," said Daddy.
"Hurry, Baby!"
"Get out of the way and I'll catch that old fly."

Question:
Why does Daddy want the Baby to get out of the way?

18-19.
The dog said, "First Mother, next Baby is still."
Daddy told his dog, "Just stay there and give me time to think.
"I hear that old fly but I can't see him."

Question:
What is daddy thinking about?

2ND GRADE

Page

20-21.
He had hit the wrong person twice.
This time he said to the pup, "Get out of my way so I can hit the only thing I really want to hit."
The poor pup got it this time!

Question:
Who got hit this time?

22-23.
"I'm coming after you with my chair," said Dad.
"You're only a small quiet fly and I've had enough."
I hope you're happy!"

Question:
What were 2 words Dad used to describe the fly?
What was Dad using to go after the fly?

24-25.
The chase wasn't over yet.
Dad was sure he would have that fly shortly.
Then he would throw him out of his apartment.

Question:
Why was Dad getting on a chair?

26-27.
The only one that doesn't feel badly is the fly.
He may be small and quiet but he surely was quick.
Later, Dad said, "next time, I think we'll close that window BEFORE lunch!"

Question:
Was Dad dead?

28. The fly quietly flew away, out the open window
He had another family to visit ---- FOR DINNER!
THE END

Question:
Why was the fly in the house?

APPENDIX D:
Evaluation of Intervention Using CRS

EVALUATION OF INTERVENTION USING CRS

Student's Name

_____

Course/Project

_____

Child's First Name

_____

Child's Age/Grade

_____

Name of Book/Story

_____

Approximate Grade Level of Book

_____

Circle one: Audio Tape Video Tape

3 = Frequently
2 = Sometimes
1 = Almost Never

1. Avoiding the use of metalinguistic terms ("sentence, word, period, sound, syllable, page", etc.), and using communicative words instead ("this part of the story", "the author is telling you here that....", "over here we found out that...", etc.)

2. Providing preparatory sets (i.e., pushing meaning in before the child reads that part) such as, "This tells you that...", etc.

3. Clarifying pronouns (i.e., tying the pronoun to its referent), such as "Yeah, he was the one who did it, yeah, it sure was Mr. Jones, he was the one."

4. Reducing complexities (i.e., pushing meaning into the most important part of the sentence first, even if the most important part is not at the beginning of the sentence), such as (TEXT: While Johnny was riding his bike, his mother called him for dinner. FACILITATOR: [pointing to "him mother"], "This tells you who was calling Johnny", and then, "This tells you what Johnny was doing when his mother called him".)

5. Clarifying metaphors, implicatures, and idioms (i.e., telling the child what the words mean, yet don't state explicitly) such as, (TEXT: The sky lifted me up.

FACILITATOR: "Yes, the sky was so inviting, and so big and beautiful, it made her feel as though she were flying. The sky didn't literally raise her up, but she certainly felt like she was 'lifted up' when she looked at the big, beautiful sky!"

6. Saying, "Tell me about this," or "Tell me about this by reading," (as you would do in a conversation), instead of "Read this," or "Read this to me," (as you would do when requesting a performance).

7. Pushing meaning into words and phrases ("This tells you that ..."), instead of asking questions such as, "Do you know what that means?"

8. Showing enthusiasm about the content of the story, such as, "I really can't believe he did that!", or "What a mess she made!", instead of using a boring, monotone voice during the intervention. IF YOU SHOW BOREDOM, OR LACK OF ENTHUSIASM, YOU CAN BET THE CHILD WILL DO THE SAME!!! (These children have never viewed reading as exciting, and they never will if we don't find it exciting!)

9. Pushing meaning into individual words/ phrases upon encounter, if the child stumbles even after prep sets were provided (instead of telling the child the word). Telling the child the word as a last resort, instead of a first response to a miscue.

10. Pushing meaning into morphemes (ing, ed, s, ly, etc.) when the child reads these incorrectly. If the child says "walked" for "walking", you say, "Well, it's not that he already did this. He is doing it right now!"

11. Using the pictures or previous text to clarify the content. TEXT: He was sitting on it. FACILITATOR: "Yes, he was sitting on it, the pew. (pointing back and forth from either the picture or the pronoun referent to the present word).

12. Using positive responses to miscues,

such as "Well, yes, he was probably thinking about that, but that's not what the author is telling us right here," or, "I don't think that is quite what the author means," instead of, "No, that's not right!", or "You read that wrong". Because these children have received negative feedback for so long, they perceive themselves as poor readers (many of them will tell you as much). We must interpret their responses as positively as possible, so that they will perceive themselves as able readers. "We are what we think we are!"

13. Repeating the words or phrases that the child mispronounces or misunderstands as often as possible within the context of the story, by going back and restating what has happened so far (using those troublesome words/phrase). Also, you should embed synonyms into these restatements, such as, "Yeah, the guests, (those folks coming to visit), would be over later". These words/phrases will become part of the child's language system only through frequent repetition in meaningful contexts.

14. Frequently requesting that the child go back and tell about (read) what has already been talked about. This keeps previous information fresh, so that the child can use this to understand new information.

15. Pushing meaning in, instead of telling the child to attend to superficial decoding aspects of reading such as letters, sounds, syllables, etc. Many of these children are "stuck" in the aspectual (Sulzby) stage of reading. That is, they view reading as decoding activity only. For many of them, reading has never made sense anyway, so why should they try to seek meaning now? It is our charge as a facilitator (or liaison between author and reader), to change this view! We should help them to see that "meaning" is what reading is all about.

16. Establishing transitions, that is, connecting what has happened so far to what is happening now, such as, "Yeah, remember over here, he

said he was broke, so I can see why he would be looking for a job now!"

COMMENTS:

(to be completed by the evaluator)

VITA

Melanie Ezell is a certified speech-language pathologist. She earned a Bachelor of Science degree and a Master of Science degree from Louisiana State University in 1971 and 1972 respectively. She served as special education teacher in the public schools, providing classroom instruction to elementary age children. She has also served as a resource, curriculum, and admissions consultant in a private school for children from kindergarten through middle school. Prior to beginning work in her doctoral program, she worked full time at two universities. In both programs she supervised undergraduate and graduate students. Her emphases were in the area of assessment and language intervention from preschool through middle school. She has supervised students in programs developed by Dr. Norris for several years. She has taught inservice programs to both classroom teachers and resource personnel. She is presently serving as a Lower School Principal at a private school in Baton Rouge, Louisiana, where she is responsible for pre-kindergarten through sixth grades.

MASTER'S EXAMINATION AND THESIS REPORT

Candidate: Melanie Crim Michaelson-Ezell

Major Field: Communication Disorders

Title of Thesis: Evaluating the Efficacy of Communicative Reading Strategies with High Risk First Grade Students

Approved:

Janet Norris
Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

Paul A Hoffman

James B. Oetting

Susan Leggett

Ann Snowdale

Date of Examination:

04/04/95